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Consumers' Perceptions and Experiences of Food Quality in Purchasing Fresh Food from Retail Outlets in Malaysia

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

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Abstract

Malaysia, like many other developing countries, is experiencing major change within its retail food industry. A number of pull factors including an increase in personal disposable income, greater urbanisation, changes in lifestyle and an increasing interest in food safety have contributed to the emergence of modern supermarkets and hypermarkets in Malaysia. Previous studies into the impact of modern food retailing suggest that many consumers will shift their food purchasing behaviour from the traditional retail outlets to modern retail formats which offer better quality products, lower prices, a more comfortable environment and the convenience of one-stop shopping.

A shopping-mall intercept survey of more than 500 foodshoppers in the Klang Valley revealed that despite the expansion of modern retail formats in Kuala Lumpur, most consumers still purchase the majority of their fresh/chilled meat and fresh fruit and vegetables from traditional retail outlets. Although modern retail outlets and traditional markets share many of the same variables which influence respondents' choices of retail stores, the traditional markets for fresh/chilled meat are anticipated to remain strong as many consumers perceive that the food available from these markets is guaranteed Halal and safe to eat. Furthermore, consumers still appreciate the personalised service offered by trusted and knowledgeable vendors, which is seldom offered when purchasing fresh food from a modern retail outlet. Among the main drivers for consumers to purchase their fresh fruit and vegetables from a traditional market were the ability to bargain on price, the lower price offered and the wider range of fresh produce available.

In the attempt to identify the relationship between the perceived quality cues and quality attributes in respondents' decisions to purchase fresh food, the findings from this study reveal that a number of variables were utilised by respondents to evaluate a multiple number of desired values. The freshness of both fresh/chilled meat and fresh fruit and vegetables signifies that the food will have a good taste, a good texture/mouth feel, be healthy and nutritious and represent good value for money. Fresh/chilled meat that is free from growth promotants and fresh produce that is free from chemical residues indicates that the food is safe to eat, healthy and nutritious and has been produced in a manner that was not harmful for the environment or worker welfare. The findings of the study have practical implications for producers, food marketers and the government.

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Abbreviations

The following abbreviations are used in the text of the thesis:

ASEAN – Association of Southeast Asian Nations
BRC – British Retail Consortium
CAP – Consumers Association of Penang
CASSA – Consumers Association of Subang and Shah Alam
COOL – Country-of-Origin Labelling
DVS – Department of Veterinary Services
EU – European Union
FAMA – Federal Agriculture Marketing Authority/*Lembaga Pemasaran Pertanian Persekutuan*
FAO – Food and Agriculture Organisation of the United Nations
FG1 – Focus Group 1
FTZ – Free Trade Zones
GAHP – Good Animal Husbandry Practices
GAP – Good Agricultural Practices
GDP – Gross Domestic Product
GMP – Good Manufacturing Practice
DOA – Department of Agriculture/*Jabatan Pertanian Malaysia*
HACCP – Hazard Analysis Critical Control Point
IADP – Integrated Agricultural Development Project
IMP – Industrial Master Plan
ISO – International Organisation for Standardisation
JAKIM – Department of Islamic Development Malaysia/*Jabatan Kemajuan Islam Malaysia*
KLIA – Kuala Lumpur International Airport
MAQIS – Malaysian Quarantine and Inspection Services
MARDI – Malaysian Agricultural Research and Development Institute/*Institut Penyelidikan dan Kemajuan Pertanian Malaysia*
MATRADE – Malaysia External Trade Development Corporation
MCB – Muslim Council of Britain
MIDA – Malaysian Industrial Development Authority
NAFC – National Agriculture and Food Corporation
NAP1 – First National Agricultural Policy
NAP3 – Third National Agricultural Policy
NSM – Nutrition Society in Malaysia
PDO – Protected Designation of Origin
PPIM – Muslim Consumers Association of Malaysia/*Persatuan Pengguna Islam Malaysia*
SALM – Malaysian Farm Good Agricultural Practice Scheme/*Skim Akreditasi Ladang Malaysia*
SALT – Livestock Farm Accreditation Scheme/*Skim Amalan Ladang Ternakan*
SEM – Structural Equation Modelling
SIRIM –Standard and Industrial Research Institute of Malaysia
SOM – Malaysian Organic Scheme/*Skim Organik Malaysia*
SPLAM – Malaysian Aquaculture Farm Certification Scheme/*Skim Pensijilan Ladang Akuakultur Malaysia*
SPS – Sanitary and Phytosanitary

TEMAN – National Food Terminals/*Terminal Makanan Negara*
TFQM – Total Food Quality Model
TQM – Total Quality Management
UK – United Kingdom
UKM – National University of Malaysia/*Universiti Kebangsaan Malaysia*
USA – United States of America
USIM – Islamic Science University of Malaysia/*Universiti Sains Islam Malaysia*
USDA – United States Department of Agriculture
VHM – Veterinary Health Mark

RM: AUD
1 RM: 0.27 AUD

1. Introduction

1.1 Background of the study

Prior to independence in 1957, primary production played a significant role in the Malaysian economy (Kuruvilla 1995; Arshad 2007; Azima and Ismail 2009). Kuruvilla (1995) reported that the export of primary commodities, tin and rubber, accounted for 85.0% of export earnings and 48.0% of the Gross Domestic Product (GDP). At that time, the development of the agriculture sector was imbalanced, for British companies actively supported plantation agriculture (mainly rubber and other commercial crops), whereas the balance of the rural sector was neglected (Arshad 2007). As a result of the inequality in growth and income distribution, poverty among the rural population increased which required the government to make structural changes.

After independence, the Malaysian government started to develop the manufacturing sector to boost the national economy (Lim 1987; Rashid and Elameer 1999). The main objectives were: (1) to diversify its agriculture-based economy, given that the economy was too dependent on the export of rubber and tin products; (2) to improve unemployment by generating more employment opportunities; and, (3) to enhance a more even distribution of income (wealth).

In 1986, the government introduced an Industrial Master Plan (IMP) for the period from 1986 to 1995, to shift the export sector from low value raw materials to high value-added products (Hashim 1998). The second IMP, which covered the period from 1996 to 2005, further enhanced the growth momentum of the manufacturing sector by inviting greater involvement from small and medium-sized industries (Hashim 1998; Rashid and Elameer 1999).

As a result of structural changes to the Malaysian economy over the period of 1965 to 2005, the contribution that agriculture has made to the GDP and employment has continually declined (Table 1.1).

Table 1.1: Gross Domestic Product and employment by sector (1965 – 2005)

Sector	1965	1970	1975	1980	1985	1990	1995	2000	2005
Agriculture									
% of GDP	34.4	29.0	27.7	22.9	20.8	18.7	13.6	10.5	7.0
% of employment	54.6	53.5	49.8	39.7	35.7	26.0	18.0	13.1	12.9
Mining									
% of GDP	5.2	13.7	4.6	10.1	10.4	9.7	7.4	5.7	5.5
% of employment	2.5	2.6	2.2	1.7	1.1	0.6	0.5	0.5	0.4
Manufacture									
% of GDP	11.0	13.9	16.4	19.6	19.7	27.0	33.1	37.5	35.8
% of employment	8.4	8.7	11.1	15.7	15.1	19.9	25.9	28.9	28.7
Construction									
% of GDP	4.3	3.8	2.1	4.6	4.8	3.5	4.4	4.8	3.2
% of employment	3.5	2.7	4.0	5.6	6.9	6.3	8.3	9.3	7.0
Services									
% of GDP	45.1	36.2	49.2	40.1	43.6	42.3	44.2	45.7	48.5
% of employment	33.5	32.5	35.1	37.3	41.2	47.2	47.3	48.2	51.0

Source: adapted from Rashid and Elameer (1999), Malaysia (2001)

In 1965, the contribution that agriculture made to the GDP was 34.4%, which declined to 13.6% in 1995. The Seventh Malaysia Plan, which covers the period from 1996 – 2000, forecasts that the contribution agriculture will make to the GDP will decline still further to 10.5% in 2000 (Rashid and Elameer 1999). At the same time, Malaysia has experienced a marked reduction in the number of people employed in agriculture, with employment declining from 54.6% in 1965 to 18.0% in 1995. Conversely, the GDP for the manufacturing sector has increased more than three times over the period of 1965 to 2005.

Similarly, the service sector continues to expand both its share of the GDP and employment. Growth in the services sector is supported by strong growth in transport and communications, finance, insurance, real estate, business services, infrastructure, hotels and restaurants, government services, and the wholesale and retail trade (Al-Amin et al. 2007).

With strong economic growth, together with greater urbanisation, an increase in the level of personal disposable income and changes in the lifestyle of people, the need, preferences and the way in which Malaysian consumers purchase their food is changing. Today, more Malaysians are eating away from home, there is a greater

demand for convenience and a greater range of food is available in retail stores (Radam et al. 2006). Kamruddin et al. (2007) has observed that as the Malaysian population grows at 2.5% per annum, the increased demand for food has led to an increase in food imports.

Although the contribution that the agriculture sector makes to the national economy has steadily declined, the Malaysian government continues to regard the sector as strategically important (Dano and Samonte 2005). This is reflected by the policies that have been developed in the government's five year plans. In the Fourth Malaysia Plan, which covers the period from 1981 to 1985, the First National Agricultural Policy (NAP1) was launched to provide strategies and long-term plans towards developing and sustaining the agriculture sector. The Third National Agricultural Policy (NAP3), which covers the period from 1998 to 2010, was formulated during the Seventh Malaysia Plan. In relation to the food industry, the government is endeavouring to address the challenges of increasing food import bills through: (1) emphasising market demand and consumer preferences in order to meet the needs of domestic and global markets; (2) enhancing the production of high market value crops; (3) encouraging more investment by the private sector in large-scale farming, and (4) supporting research and development into new crops of commercial value (Dano and Samonte 2005; Othman et al. 2009).

According to the Malaysian Industrial Development Authority (MIDA), the Malaysian food industry is dominated by small and medium-sized enterprises in such areas as fisheries, livestock and fresh fruit and vegetables. Insufficient domestic food production has resulted in food imports becoming the major source of Malaysia's food supply (Warr et al. 2008). Among the major food imports are cereals, fish products, fruit and vegetables, sugar and honey, and meat (The Ninth Malaysia Plan 2006).

As a result of the high dependence on food imports, food quality and safety is emerging as a major issue. Quality is generally ranked as the most important criterion that influences the consumer's food choice (Prescott et al. 2002). In Malaysia, Shamsudin and Selamat (2005) report that more consumers are starting to shop at modern retail outlets because food products offered in these stores are

perceived to be of higher quality. Arshad et al. (2006) reveal that consumers who reside in urban areas have more purchasing power, are more health conscious, and are more demanding of quality. Between ethnic groups, Tey et al. (2008a) found that Chinese consumers were more willing to pay for higher-quality beef products than Malays or Indians. In another study, Tey et al. (2008b) revealed that quality influenced the consumer demand for products such as meat, fish, fruit and vegetables.

The quality demanded in fresh food products are also expected to increase in line with the population's growing income. Despite consumers' interest in purchasing higher quality food, Shamsudin and Selamat (2005) mentioned that Malaysian agricultural producers are not very quality-oriented, due to poor market signals and the lack of market incentives for high quality produce. In the Malaysian meat industry, there is a need for local producers to address technical and practical aspects of production and distribution in order to deliver safe, higher quality Halal meat products to consumers (Othman et al. 2009).

In relation to food safety, consumers in many countries have shown their concern towards the chemical and microbial safety of products such as meat (McCluskey et al. 2005; Krystallis and Arvanitoyannis 2006) and fresh fruit and vegetables (Baker 1999; Caswell 2000). In a local study conducted by Salleh et al. (2003), 35.0% of the fresh vegetables purchased from various wet markets around the Klang Valley were found to be contaminated with *Salmonellae*. Irrigation water, as well as the place of purchase, were possible sources of contamination.

According to Loureiro and Umberger (2007), origin is an important signal of food safety and quality. China is the leading exporter of fresh vegetables to Malaysia, followed by India, Thailand and Australia (Warr et al. 2008). From 1995 to 2006, Malaysian imports of vegetables from China have increased from USD80 million to USD200 million. The increasing import of food from China and other countries presents a potential risk to public health in Malaysia. For example, food imported from China often contains banned substances, antibiotics, preservatives and pesticides. Despite the warnings from Hong Kong and Singapore health authorities on the danger of importing food products produced in China, Malaysian authorities

have thus far failed to conduct more stringent checks on the safety and quality of imported food products. As a result of this, consumers' confidence in the level of food safety may be dampened (Selamat 2007).

Halal is another major concern for consumers, particularly in a Muslim country such as Malaysia. Shafie and Othman (2006) report that Muslim consumers place more importance on products which possess Halal label than products with ISO certification. Similarly, the findings of Rezai (2008) reveal that Malaysian consumers are more confident in consuming food which carries a local Halal label. Wan Omar et al. (2008) show that variables such as a certified Halal label, ownership of the business and knowledge about the food product ingredients have a positive impact on the consumers' attitude towards Halal food products.

Nevertheless, consumers in Malaysia often encounter negative experiences when purchasing food from retail outlets. For example, consumers were shocked by the news that chicken meat and pork meat were stored together in some supermarkets and chicken were being slaughtered by non-Muslims (Che Man and Selamat 2005). A number of cases have also been reported in the media where Halal logos have been manipulated. *Harian Metro* (2005) [cited in Rezai 2008] reported that a Muslim man found roast pork in a plastic bag, packed together with the chicken he had purchased from a retail store that carried a Halal logo from JAKIM. Upon investigation, it was found that the pork and chicken had been roasted in the same pit. Yatim (2008) reported that after discovering that two black chickens were not Halal (did not have their jugular veins and trachea properly severed), the shopper decided to sue Perak Duck Food Industries Sdn Bhd, CKL Marketing Sdn Bhd and Tesco Stores (M) Sdn Bhd because of negligence. Many food retailers and restaurant operators are operating under expired Halal quality assurance programs and other unregistered food manufacturers are using Halal logos to promote their businesses (Rezai 2008; JAKIM's website 2010). Consequently, these issues have the potential to undermine Malaysia's reputation as a global Halal food hub and to undermine the consumers' confidence in food companies and the relevant authorities.

Besides food safety and Halal, there are other product attributes such as freshness (Bonne and Verbeke 2006; Batt 2009), price (Batt 2004; Brunton 2009), label/brand (Sepulveda et al. 2008; Fernqvist and Ekelund 2009) and organic (McEachern and Schroder 2002; Yiridoe et al. 2005) which influence consumers' perception of food quality when purchasing fresh/chilled meat and fresh fruit and vegetables. Some of these attributes can be found in modern retail outlets (supermarkets and hypermarkets), whereas other attributes can be best obtained from traditional retail outlets (wet market/fresh market, farmers market, night market, wholesale market, and traditional grocery stores/mini markets).

Long before modern retail outlets were developed in Malaysia, consumers purchased their food items, as well as other household products, from traditional stores. Items such as fresh and packed food, cosmetics, household appliances, textiles, toys, books, cleaning products, furniture and much more are available from most modern retail outlets (Palau et al. 2006). Additionally, modern retail outlets are more capable of offering a competitive price (Arshad et al. 2006; Minten and Reardon 2008), higher quality products (Faiguenbaum et al. 2002; Minten et al. 2010), and convenience in terms of a one-stop shopping experience (Shamsudin and Selamat 2005; Ahmed et al. 2007). As a result, there is a growing expectation that more shoppers will purchase a greater proportion of the fresh food that they consume from modern retail outlets. Nevertheless, some consumers still prefer to purchase their fresh food from traditional vendors because of the good and friendly service provided (Goldman et al. 2002; Sinha and Banarjee 2004). Consequently, the criteria that consumers use in their decision to purchase fresh/chilled meat and fresh fruit and vegetables may influence their choice of retail store.

1.2 Research problems and objectives

The growth and expansion of modern retail formats in Malaysia, together with the rise in personal disposal income, changes in lifestyle and the increase of food safety awareness among consumers, provides the consumers in Malaysia with a greater choice of retail stores and quality attributes in making their decision to purchase fresh/chilled meat and fresh fruit and vegetables. The aim of this thesis is to understand the perceptions and experiences of Malaysian consumers in the Klang

Valley in purchasing fresh/chilled meat (chicken and beef) and fresh fruit and vegetables (potatoes, spinach and apples) from different retail stores.

The thesis will address each of the following research problems:

1. To gain an understanding of how consumers describe quality in purchasing fresh/chilled meat and fresh fruit and vegetables.

2a. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional outlet).

2b. To identify any significant difference in the importance of these quality cues by the place of purchase (modern retail outlet or traditional outlet).

2c. To segment respondents according to the importance of these quality cues in purchasing fresh/chilled meat and fresh fruit and vegetables by their preferred retail store.

3. To identify any significant difference in the quality of the fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional market).

4a. To gain an understanding of the quality cues that consumers look for in purchasing fresh/chilled meat and fresh fruit and vegetables.

4b. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables.

5a. To understand the relationship between perceived quality cues and quality attributes.

5b. To identify the relative importance of the quality cues on the desired quality attributes.

6. To identify any significant difference in the importance of the quality attributes consumers desire in purchasing fresh/chilled meat and fresh fruit and vegetables.

7a. To identify the extent to which consumers' expectations (quality cues and quality attributes) are fulfilled by consumption (experiential quality).

7b. To identify the extent to which consumers adjust their expectations in response to dissatisfaction.

With regard to the choice of retail stores, this study makes no distinction between supermarkets, department stores and hypermarkets in defining modern retail formats. The key criteria is that the retail store must be engaged in marketing fresh food, which also includes supermarkets, department stores and hypermarkets within a modern shopping mall. Based on this criteria, research will not explore attitudes and perceptions towards convenience stores and service stations such as 7-Eleven, given that fresh/chilled meat and fresh fruit and vegetables are seldom available from these stores.

This study focuses only on the way and the manner in which consumers exercise their choice when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. It is not a study of supply chain management or logistics nor does it seek to examine the implications of modern retail expansion on smallholder farmers. However, one of the reasons that people choose to shop either from modern retail outlets or traditional markets is the perceived difference in the quality of the product. While the logistics and distribution systems of both modern retail outlets and the traditional market are vastly different (Reardon et al. 2003), this study does not seek to explore differences in the performance or efficiency of the respective supply chains. It is more about exploring the reasons why people choose to purchase their fresh food from either a modern retail outlet or traditional markets.

1.3 Significance of the study

This research will be of interest to several groups. Firstly, the outcome of this research will assist the Malaysian food industry by providing new insights into the consumers' perceptions of food quality. Although much of the literature has focused on how to produce quality food from a business perspective, to improve quality in the food industry, more attention must be directed towards gaining a greater understanding as to how consumers perceive quality. Ultimately, consumers are the ones who decide the quality they want and expect in the food that they consume.

Additionally, most of the studies on this topic have been conducted in developed countries such as Europe and the United States. There is limited research which

focuses on food quality and consumer behaviour in developing countries such as Malaysia. This study is undertaken as an initial attempt to better understand the factors which most influence consumers purchasing decision in determining the quality of the fresh food purchased from different retail stores. The findings from this study, which involve consumer purchasing behaviour in a non-Western setting, will add to the extant literature.

The outcome of this research can be utilised by food manufacturers to narrow the gap that exists between business and the consumers. Quality is an important criteria consumers consider in their decision to purchase fresh/chilled meat (Becker 2000; Hoffman 2000) and fresh fruit and vegetables (Berdegue et al. 2005; Zenk et al. 2005; McKinna et al. 2007). Consumers consider such factors as freshness (Grunert et al. 2004; Rico et al. 2007), freedom from chemical residues (Wandel and Bugge 1997), taste (Grunert 2005), nutritional value (Torjusen et al. 2001), and food safety (Caswell and Mojduszka 1996; Burlingame and Pineiro 2007; Ong et al. 2008). The findings of this study could contribute to various marketing strategies for both modern and traditional retailers by providing an in-depth analysis of what consumers actually search for in making their decision to purchase fresh food from a retail store. Additionally, the insights from this research could be useful in facilitating new product development, improving product quality and differentiating food products from competitors.

Given that traditional retailers are facing challenges arising from the modernisation of the food retail industry, the findings of this study may provide some solutions for traditional retailers to revolutionize the way they manage their business operations. Furthermore, this study will provide information about the behaviour of Malaysian consumers when purchasing fresh food which may be important for international retailers in expanding their business within Malaysia.

For the food quality authorities in Malaysia, this research may assist in establishing standards to improve food quality and food safety education. The food quality and food safety system in Malaysia is complex, with many different authorities including the Food Quality Division of the Ministry of Health, the Department of Agriculture, the Federal Agricultural Marketing Authority, the Ministry of

International Trade and Industry, and the Standard and Industrial Research Institute of Malaysia (SIRIM) being in some way responsible for food quality.

1.4 Outline of the thesis

This thesis is comprised of twelve chapters. The current chapter introduces the background, objectives and significance of this study.

Chapter Two provides an overview of the agriculture and food industry, food retailing and the food service industry in Malaysia.

Chapter Three presents an extensive review of the literature on consumer behaviour and perceived quality. In reviewing the literature, the following topics are addressed: the importance of understanding consumer behaviour, consumers' involvement in food products, consumer motivations and several consumer behaviour models. A conceptual framework is then developed from the literature to guide this study.

Chapter Four is divided into two parts. Part One reviews the modernisation of the food retail industry, which focuses on the emergence of supermarkets and hypermarkets in Malaysia. Part Two discusses the factors which are believed to influence the consumers' decision to purchase food from either a modern retail outlet or a traditional market.

Chapter Five describes the preliminary research methodology. The discussion includes the design of the survey instrument and data collection through focus group interviews.

Chapter Six presents the preliminary research findings collected from four focus group interviews. This chapter focuses on the variables which were found to influence the consumers' choice of retail store when purchasing fresh/chilled meat and fresh fruit and vegetables.

Chapter Seven discusses the main research methodology employed in this study. The discussion is divided into several sections: (1) sampling design process (defining the target population, determining the sampling frame, selecting a sampling technique, and determining the sample size); (2) questionnaire design; (3) translation procedure and pilot testing the questionnaire; (4) data collection; and (5) the data analysis techniques (univariate and multivariate).

A description of the respondents interviewed will be presented in Chapter Eight.

Chapter Nine will be presented in several parts. The first part will focus on the various factors that influence the consumers' decision to purchase fresh/chilled meat from either a modern retail outlet or a traditional market, whereas, in the second part, the various factors that influence their decision to purchase fresh fruit and vegetables from either a modern retail outlet or a traditional market will be explored. In Part Three, the results will be compared and contrasted.

Chapter Ten presents the results of the criteria consumers use in their decision to purchase fresh/chilled meat (chicken and beef). The manner in which respondents react when they are dissatisfied with the quality of the fresh/chilled meat they have purchased will be discussed. The final section of the chapter will focus on the similarities and differences consumers use when purchasing both meat products.

Chapter Eleven is similar to Chapter Ten, except that the discussion focuses on the criteria consumers use in their decision to purchase fresh potatoes, fresh spinach and fresh apples from a retail store.

Chapter Twelve, which is the final chapter, concludes by addressing the research objectives of this study. The chapter discusses the limitations experienced by the researcher, together with possible directions for future research.

2. An overview of the food industry in Malaysia

2.1 Chapter outline

This chapter will provide an overview of the food industry in Malaysia. The chapter begins with a brief overview of the agriculture industry in Malaysia as a whole, followed by an examination of the sub-sectors which are related to this research project (the livestock industry and the fresh fruit and vegetable industry). Before discussing the food retail industry in Malaysia, a brief overview of the current food marketing and distribution system will be provided. Through an examination of demographic and socio-economic variables, consumer trends and their impact on the food marketing and distribution system in Malaysia will be explored. A summary is presented at the end of the chapter.

2.2 An overview of the agricultural industry in Malaysia

The Malaysian gross domestic product (GDP) continues to grow which is indicative of strong economic growth. In 1970, the Malaysian GDP was reported to be worth RM48 billion (Table 2.1).

Table 2.1: Malaysian Gross Domestic Product (GDP) by industry

Sector	1970	1980	1990	2000	2005	Average Annual Growth Rate 2001-2005
Gross Domestic Product (in RM billion)	RM48	RM56	RM73	RM211	RM262	4.5
Agriculture, forestry, livestock and fisheries	29.0	22.9	18.7	8.9	8.2	3.0
Mining and quarrying	13.7	10.1	9.8	7.3	6.7	2.6
Manufacturing	13.9	19.6	26.9	31.9	31.4	4.1
Construction	3.8	4.6	3.6	3.3	2.7	0.5
Services	39.6	42.7	41.1	48.6	50.9	6.1

Source: Malaysia 2006.

In 2000, the Malaysian GDP had grown to RM211 billion and by 2005 had reached RM262 billion. On average, the GDP has increased at an annual growth rate of 4.5%.

Historically, agriculture has played a significant role in the Malaysian economy. In 1970, the contribution that the agricultural sector made to the Malaysian GDP (29.0%) far outweighed the contribution made by the manufacturing sector (13.9%). However, over many years, the Malaysian economy has undergone major structural change, where the contribution made by the manufacturing and service industry to the Malaysian GDP is larger than the contribution made by agriculture. In 2005, the service industry contributed 50.9%, followed by the manufacturing sector at 31.4%, whereas agriculture contributed only 8.2% (Malaysia 2006).

Although the contribution that the agricultural sector makes to the Malaysian GDP is small, during the period from 2001-2005, the value of agriculture increased from RM18.7 billion to RM21.6 billion (Table 2.2).

Table 2.2: Value added of agriculture and agro-based industry

Commodity	In RM billion	
	2000	2005
Agriculture	18.7	21.6
Industrial Commodities	11.0	13.3
Food Commodities	7.6	8.3
Agro-based industry	13.5	16.9
Total Agriculture and agro-based industry	32.2	38.5

Source: Department of Statistics and Economic Planning Unit. Adapted from Malaysia 2006.

Furthermore, agriculture continues to be a significant export earner for the country (Table 2.3).

Table 2.3: Agriculture and agro-based manufactured export

Commodity	%	
	2000	2005
Agriculture exports	48.1	50.0
Industrial commodities	38.7	42.1
Food commodities	9.4	7.9
Agro-based manufactured exports	51.9	50.0
Total agriculture and agro-based exports	100.0	100.0

Source: Department of Statistics and Economic Planning Unit. Adapted from Malaysia 2006.

The major commodities which have contributed to the value of agricultural exports include palm oil, rubber and sawn timber. According to the Malaysian Industrial Development Authority (MIDA), the major food products exported by Malaysia to other countries include cocoa, fisheries products, margarine and shortening.

Chong (2007) described agriculture in Malaysia as having a dualistic production structure. On one side, the primary commodities (palm oil and rubber) operate efficiently as large-scale plantations. However, on the other side, small-scale food crop producers (paddy, fruit and vegetables) are not internationally competitive. Arshad and Hameed (2007) reveal that aside from paddy, other food commodities have not received sufficient support from government.

Given that industrial commodities comprise the greatest share of the Malaysian agricultural industry, the country is highly dependent on food imports (Table 2.4).

Table 2.4: Imports of food by Malaysia

Commodity	RM million		% of total	
	2000	2005	2000	2005
Feeding stuff for animals	1,928.4	2,838.2	18.3	18.4
Cereal and cereal preparations	1,839.1	2,267.1	17.4	14.7
Fisheries product	1,085.8	1,851.9	10.3	12.0
Others	917.3	1,779.6	8.7	11.5
Dairy products	1,176.5	1,745.1	11.2	11.3
Vegetables	1,023.6	1,620.2	9.7	10.5
Sugar, sugar preparations and honey	1,085.2	1,406.0	10.3	9.1
Meat and meat preparations	771.4	1,054.6	7.3	6.8
Fruits	561.6	694.9	5.3	4.5
Live animals	154.6	177.4	1.5	1.1
Total	**10,543.5**	**15,435.0**	**100.0**	**100.0**

Source: Department of Statistics and Ministry of Agriculture and Agro-based industry. Adapted from Malaysia 2006.

In 2005, beside animal feeds, 14.7% of the total value of food imports were for cereal and cereal preparations, 12.0% were for fisheries products, 11.3% were for dairy products and 10.5% were vegetables.

In 2005, Malaysia was self-sufficient in poultry (122.0%), fruit (117.0%), eggs (113.0%) and pork (107.0%) (Table 2.5).

Table 2.5: Self-sufficiency levels in food commodities (%)

Commodity	2000	2005	2010[e]
Rice	70	72	90
Fruits	94	117	138
Vegetables	95	74	108
Fisheries	86	91	104
Beef	15	23	28
Mutton	6	8	10
Poultry	113	121	122
Eggs	116	113	115
Pork	100	107	132
Milk	3	5	5

Source: Ministry of Agriculture and Agro-Based Industry and Malaysia 2006.
Notes: [e] estimated

However, Malaysia was a net importer of rice, fresh vegetables, fish and fish products, dairy products, beef and mutton. In 2008, Malaysia imported food products worth more than RM28 billion (Malaysian Industrial Development Authority n.d.).

According to Mohayidin et al. (2007), the Malaysian government is concerned by the increasing trend in the value of imported food due to the fact that the country has a vast amount of natural resources, which are capable of producing sufficient food to meet the demands of the national population. Consequently, the government has sought to revitalise the sector as the third engine of growth during the Ninth Malaysia Plan 2006-2010 (Malaysia 2006). The strategies outlined under the theme 'New Agriculture' emphasise the development of food production, through:

1. increasing agricultural production

This will be achieved through: (1) supporting the existing food commodity subsector; (2) new sources of growth; (3) new land development, and (4) enhancing productivity. Under the Green Book Programme, the government plans to improve the level of self-sufficiency for paddy, fruit and vegetables, fish and the livestock industry to meet the demands of the domestic population. The Green Book Programme introduces the concept of backyard farming and community farming,

whereby society is encouraged to plant their own fruit and vegetables, and to rear chickens or fish for their own consumption (Syed Ali n.d.).

The ‘New Agriculture’ programme will also attempt to develop new sources of growth, in areas such as tuna and herbs. To reduce the risks and to expand food exports, sanitary and phytosanitary (SPS) measures will be introduced to eradicate specific pests and diseases and to establish disease-free zones.

Considering the global potential of the Halal market, the production of Halal food, which includes the processing and packaging of meat, fisheries products and other food-based products, will be promoted. Financial institutions will be encouraged to provide credit facilities for small and medium-sized enterprises who wish to invest in any food related agricultural activities.

Through large-scale production and precision farming systems, new production zones for industries such as fruit, vegetables, livestock and aquaculture will be established. For paddy, farmers will be encouraged to cultivate high quality paddy varieties. Any land that is not utilised for paddy will be used to plant other crops for the purpose of self consumption or to produce marketable crops to provide a better income.

Among the steps that will be implemented to enhance productivity is the adaptation of advanced technologies and the utilisation of new equipment and machinery. In order to support this effort, special training and adequate technical assistance will be provided to farmers.

2. expanding agro-based processing activities and product diversification

Here, the main focus will be on the production of high value-added products. Biotechnology will be applied to various sub-sectors of the agriculture industry, particularly through the production of higher yielding crops and better animal breeds. Biotechnology can assist with the development of crop varieties with higher yield capacity; disease resistant food crops, which will minimise the use of pesticides, herbicides, antibiotics and other chemicals that may impact on the environment; and produce higher quality products for export markets (Yusoff

2007). For example, with the usage of biotechnology in the cocoa industry, high quality cocoa varieties that are more resistant to disease, have a higher cocoa butter content and improved cocoa flavour will be produced. Yusoff (2007) also mentioned that biotechnology was important for the livestock and aquaculture industry to increase production through the manipulation of growth traits, feed development, the prevention of diseases and a general improvement in health.

A food valley hub will be established in the Klang Valley as a centre of excellence for biotechnology-based food production and processing, which is hoped will attract participation and strengthen the collaboration between local universities, government research and development institutions such as the Malaysian Agricultural Research and Development Institute (MARDI) and the private sector.

Given that Malaysia has strong credentials in Halal certification, the government plans to develop Malaysia as a regional hub for Halal food production. Greater attention will be given to promote food quality and safety for Halal food products.

At the same time, Malaysia plans to invest in more convenient and functional foods, such as ready-to-use seafood, processed livestock products, convenience vegetable meals and high fibre products to meet changing consumption patterns and greater awareness of healthier lifestyles among Malaysian consumers.

3. strengthening marketing and global networking

The Federal Agricultural Marketing Authority (FAMA) is responsible for facilitating contract farming operations between small scale producers and wholesalers, hotels and retailers (supermarkets and hypermarkets). With the establishment of new collection and distribution centres, also known as National Food Terminals (TEMAN), the collection, grading and marketing of local agricultural produce will be improved. Through farm accreditation schemes and product standardisation, food products will be marketed to meet international requirements with assistance from FAMA. The Malaysian Quarantine and Inspection Services (MAQIS) is responsible for ensuring that all imported food complies with the national food safety standard. The Malaysia External Trade

Development Corporation (MATRADE) is in charge in marketing and promoting agro-food based products for potential export markets.

4. improving the service delivery system

FAMA will work together with the National Agriculture and Food Corporation (NAFC) to facilitate the marketing of agricultural products from small scale farmers. NAFC will concentrate on the marketing and distribution of agriculture produce and agro-based products on a larger scale.

5. enhancing incomes for farmers, small holders and fishermen

Under the Integrated Agricultural Development Project (IADP), paddy farmers will be encouraged to participate in group farming activities, as well as food processing activities. It is estimated that the average income of 25,000 paddy farmers will increase by joining this programme. In order to improve the income of fishermen, they will be encouraged to adapt fish-farming and fisheries-based processing activities. The income of livestock farmers is expected to increase through contract farming.

Throughout the period of the Eighth Malaysia Plan (2001-2005), the production of food commodities recorded positive growth as a result of the aggressive implementation of programmes and projects to increase food production and exports (Malaysia 2006) (Table 2.6).

Overall, each sub-sector in the food industry, except for pepper, recorded positive growth. In the livestock industry, mutton recorded the highest growth (average 10.8% per annum), while beef production rose by 10.2% per annum. Rearing cattle and goats on palm oil and rubber plantations, together with investments by the private sector in feedlot cattle rearing, contributed to the development. Although poultry has not met the targeted growth rate, the industry has been able to meet the domestic demand. Despite the outbreak of avian bird flu in 2003, the poultry industry remained strong through an expansion in the application of closed-house systems (Malaysia 2006).

Table 2.6: Production of food commodities during the Eight Malaysia Plan 2001 – 2005

Food Commodities		Average Annual Growth Rate (%)	
		Targeted	Achieved
	Paddy	0.2	2.3
Fisheries	Marine	5.9	0.6
	Aquaculture	18.3	8.3
Livestock	Beef	18.0	10.2
	Mutton	11.0	10.8
	Pork	6.6	5.5
	Poultry	4.7	2.1
	Milk[1]	8.9	6.9
Others	Pepper	5.9	- 4.5
	Pineapple	2.0	8.9
	Tobacco	13.6	13.6
	Flowers[2]	3.3	1.0
	Fruits	3.1	9.8
	Vegetables	0.6	13.8
	Coconut	0.6	4.8

Source: Ministry of Agriculture and Agro-Based Industry and Ministry of Plantation Industries and Commodities. Adapted from Malaysia 2006.
Notes: [1] measured in million litres.
[2] measured in million stalks.

The fruit and vegetable industry has also experienced positive growth. An expansion in the area cultivated, the implementation of intensive estate-based activities, higher productivity from good farming practices and improvements in post-harvest handling have all contributed to the growth (Malaysia 2006).

2.2.1 The livestock industry

In the period of the Eighth Malaysia Plan (2001-2005), the livestock industry grew at the rate of 6.6% per annum (Mohamed 2007). According to Kaur and Arshad (2007), in 2003, poultry farming contributed about 55.4% to the value of livestock production, followed by eggs (20.4%), pork (16.7%) and beef (5.8%). Although the contribution that the livestock industry made to the national economy in 2000 was relatively small (8.1%), the industry has been steadily expanding. With the development of Beef Valley, the livestock industry is expected to contribute around 9.0% to the GDP for agriculture and food production during the period of the Ninth Malaysia Plan (2006-2010).

The livestock industry in Malaysia is divided into two main sectors; the ruminant and non-ruminant sector. The ruminant sector consists of beef cattle, dairy cattle, buffaloes, sheep and goats. This sector is considered important as it supplies the Malaysian population with high quality red meat and raw materials for the meat processing industry. Despite the priority given by the government to further enhance this sector, it continues to lag behind in terms of technology and production.

The non-ruminant sector consists of poultry (broilers and layers) and swine. In Malaysia, the poultry industry consists of chickens and ducks, with chickens consistently accounting for 94.0% of poultry population (Kaur and Arshad 2007). Unlike the ruminant sector, the non-ruminant sector has shown excellent growth. Factors such as a liberal import policy on high quality breeds, effective restrictions on the import of broiler meat, and the adoption of modern innovations in farming systems by both private or public limited companies have contributed to the development (Kaur and Arshad 2007; Mohamed 2007).

In 2005, beef production reached 38,700 tonnes which was expected to increase to 58,600 tonnes in 2010 (Mohamed 2007). However, given that the growth rate in beef cattle production is slow, and the beef cattle population is small, the level of self-sufficiency in beef is likely to reach only 28.0% in 2010 (Malaysia 2006).

In contrast, the poultry sector is the largest component of the livestock industry. In 2003, poultry accounted for 80.9% of the total meat produced, followed by pork (16.6%), beef (2.4%) and mutton (0.1%) (Ministry of Agriculture 2005). The poultry industry has not only managed to meet the local demand for chicken, but is also a net exporter of meat and eggs to Singapore and Japan (Mohamed 2007). In 2003, the level of self-sufficiency for poultry was 103.6% (Ministry of Agriculture 2005). By the end of 2010, the level of self-sufficiency for poultry is estimated to reach 122.0% (Malaysia 2006).

In 2003, poultry consumption exceeded 752,000 tonnes (Mohamed 2007). The consumption of poultry, particularly chicken, is high due to the general acceptance of chicken meat among the population, for there are no religious taboos associated

with its consumption (Kaur and Arshad 2007). Furthermore, as compared to all livestock products, including fish, poultry is the cheapest source of animal protein, which also explains the higher consumption (Table 2.7).

Table 2.7: The average retail prices of livestock products and fish in Peninsular Malaysia (RM/kg)

Year	Beef	Mutton	Poultry	Pork	Fish
1998	11.30	13.10	3.80	6.70	9.90
1999	11.40	13.20	3.90	6.80	10.20
2000	11.60	13.40	3.80	6.70	10.80
2001	14.80	18.40	5.20	6.70	9.80
2002	14.70	18.50	4.90	6.70	11.20

Source: Ministry of Agriculture and Agro-Based Industry 1995; 2004. Adapted from Mohamed 2007.

According to Mohamed (2007), the demand for beef is expected to further increase and to reach 310,000 tonnes by 2020. Factors such as good economic growth, population growth, as well as an increase in the price of fish were mentioned among the reasons for the increase in beef consumption.

2.2.2 The vegetable industry

The vegetable industry in Malaysia is comprised of a diverse group of crops. According to the Department of Agriculture [cited in Chong 2007], more than 50 different types of vegetables, ranging from leafy, fruit, root and cash crops, and spices are cultivated. Vegetables are grown for both fresh consumption and for processing. Nevertheless, the industry can best be described as small and fragmented (Chong 2007). In 2005, only 64,000 hectares were planted in vegetable crops compared to other crops such as palm oil (4,049,000 ha), rubber (1,250,000 ha), paddy (452,000 ha) and fruit (330,000 ha) (Malaysia 2006).

Despite the small market share, organic production has been identified as the fastest growing sub-sector in the vegetable industry (Chong 2007). Furthermore, the government is encouraging small-scale producers to venture into organic farming by increasing the area under production, providing better infrastructure, and introducing attractive credit schemes under the Malaysia Organic Scheme (SOM).

Overall, vegetable production has shown positive growth over the period from 2000 to 2004 (Table 2.8).

Table 2.8: Production of selected vegetables

Production ('000 tonnes)	2000	2003	2004	2005	2006
Vegetables	405	547	587	547	560
Cash crops (maize, groundnuts, yam)	86	109	119	109	112
Spices (hot chilli, ginger, lemon grass)	21	24	20	26	45
Total	512	680	725	682	717

Source: Ministry of Agriculture and Agro-Based Industry 2006. Adapted from Chong 2007.

Nevertheless, according to the Ministry of Agriculture and Agro-Based Industry (2006), Malaysia continues to experience a negative trade balance (Table 2.9).

Table 2.9: External trade of vegetables (RM'000)

Category	1998	2000	2003	2004	2005
Exports	205,934	278,411	393,734	462,785	504,497
Imports	986,844	1,023,596	1,172,404	1,518,455	1,654,582
Trade balance	- 780,910	- 745,185	- 778,670	- 1,055,670	- 1,150,085

Source: Ministry of Agriculture 2006. Adapted from Chong 2007.

From Malaysia, fresh vegetables are exported to Singapore. The major vegetables exported are choy sum, cabbage, cucumber, long bean, chilli and tomatoes (Ministry of Agriculture and Agro-Based Industry 2006).

Conversely, Malaysia imported garlic, potatoes, carrots and turnips, onions, cabbages, cauliflowers, broccoli, ginger and dried chillies from China worth more than RM680 million (Table 2.10).

Imports of onions, potatoes and spices from India accounted for about 14.0% of the imported vegetables. Thailand supplied onions, cabbages and tomatoes; Australia supplied carrots and turnips, tomatoes, celery, lettuce, potatoes and capsicums; the USA supplied predominantly potatoes; New Zealand supplied onions and frozen

vegetables; and Indonesia exported cabbages and potatoes. In 2006, the level of self-sufficiency for vegetables was estimated to reach only 58.0% (Rahim 2007).

Table 2.10: Malaysia vegetable imports, 2006

Country	2006	
	RM	%
China	680,533,949	43.0
India	217,117,643	14.0
Thailand	127,083,235	8.0
Singapore	126,756,900	8.0
Myanmar	98,787,611	6.2
Australia	94,957,680	5.9
Other countries	75,525,744	4.7
United States of America	66,942,999	4.2
Netherlands	39,723,666	2.5
New Zealand	33,815,655	2.1
Indonesia	22,306,762	1.4
Total	1,583,551,844	100.0

Source: Federal Agricultural Marketing Authority 2007. Adapted from Rahim 2007.

In 2005, it was estimated that the per capita consumption of onions (6.3kg) was the highest for the vegetable group, followed by potatoes (5.5kg) (Table 2.11).

Table 2.11: Estimated consumption of vegetable varieties in Malaysia for 2005

Product	Kg/year
Onions	6.3
Potatoes	5.5
Cabbages and other brassicas	3.7
Tomatoes	3.5
Garlic	2.6
Mushrooms and truffles	2.3
Carrots and turnips	2.2
Cucumbers and gherkins	1.5
Cauliflowers and broccoli	1.1
Sweet potatoes	0.8
Lettuce and chicory	0.2
Spinach	n.a

Source: Adapted from Mohayidin et al. 2007.

According to the Federal Agricultural Marketing Authority [cited in Rahim 2007], the per capita consumption of vegetables is expected to increase from 42kg in 2005 to 51kg in 2015.

2.2.3 The fruit industry

Traditionally, fruit growing in Malaysia is considered as a secondary activity by smallholder farmers to supplement their household income. However, over many years, large fruit plantations have developed to meet the increasing local demand and that of the export market.

The Malaysian fruit industry is made up of tropical and temperate fruits. Despite the slow growth in the fruit industry compared to other industrial commodities such as palm oil, rubber and cocoa, during the financial crisis in 1997/1998, the fruit industry greatly assisted the Malaysian economy by reducing the food import bill by increasing export earnings (Arshad and Hameed 2007).

Not unexpectedly, the production of fruit crops in Malaysia is more focused on the production of tropical fruits (Table 2.12).

Table 2.12: The production of selected major fruits by types in Malaysia (tonnes)

Type of fruits	2000	2004
Durian	306,477	399,661
Banana	178,958	317,104
Pineapples	265,682	196,690
Watermelon	72,360	115,881
Rambutan	33,866	78,949
Cempedak	25,771	45,454
Papaya	23,117	40,330
Mango	14,967	27,075
Mangosteen	16,986	24,392
Guava	11,674	24,179
Jackfruit	9,588	18,002
Starfruit	8.571	10,971
Pamelo	6,196	8,913
Total	974,213	1,283,231

Source: Federal Agricultural Marketing Authority 2002; Department of Agriculture 2006. Adapted from Arshad and Hameed 2007.

Durian is the major fruit crop produced in Malaysia, followed by banana, pineapple and watermelon. However, in terms of the percent share of the different fruit crops exported from Malaysia, durian came third at only 8.8% after papaya (33.7%) and

watermelon (22.7%) (Department of Agriculture 2006). Competition from durian producers in Thailand and Indonesia, as well as price fluctuations in the export market were identified as the main factors leading to the decline in the export of durian (Arshad and Hameed 2007). On the other hand, Malaysian papaya have been accepted worldwide. Malaysia is the world's second largest exporter of papaya after Mexico (FAO 2007). According to Arshad et al. (2005), Malaysia is the ninth largest producer of tropical fruit in the world.

In 2005, it was estimated that the per capita consumption of bananas approached 20kg and pineapples 11.9kg (Table 2.13).

Table 2.13: Estimated consumption of fruit varieties in Malaysia, 2005

Product	Kg/year
Bananas	20.0
Pineapples	11.9
Oranges	3.9
Apples	3.4
Guavas, mangoes and mangosteens	3.3
Tangerines and mandarins	2.7
Papayas	1.0
Grapes	1.8
Dates	0.6
Grapefruit	0.3
Other citrus	0.2
Lemons and limes	0.2

Source: Adapted from Mohayidin et al. 2007.

Conversely, the consumption of temperate fruits, which included oranges (3.9kg) and apples (3.4kg), were significantly lower. According to the Food and Agriculture Organisation (FAO) (2007), the per capita consumption of fruit in Malaysia is expected to increase from 56kg in 2002 to 72kg in 2010. The increase in fruit consumption is expected to arise from an improvement in the standard of living and growing health concerns (Arshad and Hameed 2007). However, the per capita consumption of fruit in Malaysia is still considered low compared to Germany (136kg), the USA (103kg), Australia (97kg) and the UK (81kg) (FAO 2007).

Oranges and apples continue to account for the greatest share of the value of temperate fruit imported into Malaysia (Table 2.14).

Table 2.14: Imports of temperate fruits by Malaysia, 2004

Type of fruits	2004	
	Value ('RM)	Ratio (%)
Oranges	80	22
Apples	69	19
Dates	49	14
Grapes	49	13
Others	46	13
Pears	38	10
Mandarins	34	9

Source: Ministry of Agriculture and Agro-Based Industry. Adapted from Arshad and Hameed 2007.

Arshad and Hameed (2007) estimate that the import value of temperate fruit will increase in the future due to factors such as an increase in population and disposable income, changes in consumers' lifestyle, and the inconsistent and unstable supply of tropical fruit.

China was the main supplier of imported fruit to Malaysia (28.3%) (Table 2.15). Fruit imported from China included mandarins and preserved fruits.

Table 2.15: Malaysia fruits import, 2006

Country	2006	
	RM	%
China	149,460,778	28.3
United States of America	99,282,970	19.0
Other countries	54,355,783	11.4
Thailand	60,004,144	11.2
South Africa	46,961,970	9.0
Australia	40,550,932	7.7
Indonesia	21,613,438	4.1
Iran	19,123,846	3.6
India	13,516,369	2.6
Chile	8,693,690	1.6
Egypt	8,088,688	1.5
Total	527,417,530	100.0

Source: Federal Agricultural Marketing Authority 2007. Adapted from Rahim 2007.

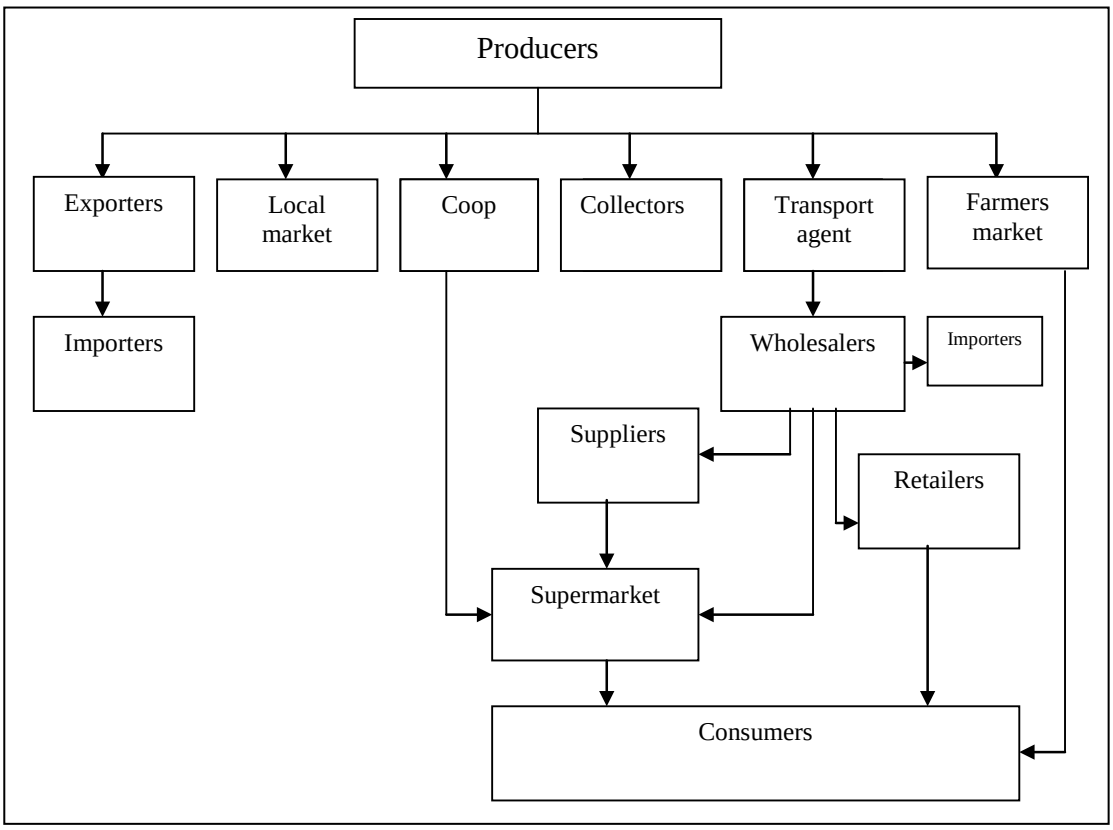
Some 19.0% of the imported fruit came from the USA, which consisted of apples and oranges. Tropical fruits such as durian, mango, lychee and rambutan were mainly imported from Thailand (11.2%).

2.3 An overview of the marketing and distribution of food products

The marketing system for fresh food must ensure that the product meets the consumers' expectations in terms of freshness and quality, together with the other preferences they desire. Agricultural products in Malaysia are marketed and distributed mainly through the private sector (87.0%), while the remainder is managed by the government sector (Rahim 2007).

The marketing and distribution of food products involves a multi-channel distribution system. The marketing channel for fresh fruit and vegetables begins at the farm level. From here, agricultural products are assembled by collector agents to be transported to collection centres and subsequent distribution to wholesalers and retailers. Rahim (2007) revealed that more than half (65.0%) of the fresh fruit and vegetables sold in Malaysia were marketed through wholesalers, while 35.0% were marketed directly to modern retailers, exporters, processing centres or through direct sales to consumers (farmers' markets) (Figure 2.1).

Figure 2.1: Marketing channel for fruit and vegetables in Malaysia



Source: Federal Agricultural Marketing Authority 2005 (Rahim 2007).

The drawbacks of a multi-channel distribution system include; (1) the high marketing cost, (2) high marketing margins, where growers receive the least benefit, and (3) high post-harvest losses, as a result of poor handling in storage and transportation.

In 2006, it was reported by FAMA [cited in Rahim (2007)] that there were a total of 25 wholesale markets and more than 300 retail market centres throughout Malaysia. FAMA also reported an increase in the number of modern retailers involved in selling fresh fruit and vegetables. At the same time, the government was upgrading the infrastructure in most farmers' markets and wet markets to encourage growers to be directly involved in the marketing and distribution of their fresh produce to consumers (Malaysia 2006; Rahim 2007). According to FAMA, there were about 245 farmers' markets in Malaysia in 2006, which accounted for sales worth more than RM300 million.

2.4 Food retailing in Malaysia

Food distribution channels in Malaysia can be divided into two broad categories: the old and the new. Different channels cater for different segments of the Malaysian population. The old format consists of traditional markets and grocery stores also known as mini-markets. The traditional market, which comprises wet markets, fresh markets, night markets or farmer's markets, are popular among consumers when purchasing fresh food.

The traditional market has been defined as a market with little central control or organisation, that lacks refrigeration and does not process fresh foods into branded goods for sale (Trappey and Lai 1997). Goldman et al. (1999) described a typical wet market as an agglomeration of small vendors, where each vendor specialised in one fresh food line (meat, fish, fruit or vegetables) or sub line (fruit and vegetables). Traditional retailers complement each other as they collectively offer a full assortment.

A fresh market and/or a wet market in Malaysia generally occupies one or two floors of a building that is located adjacent to a housing area where there is a high

population density and high traffic flow. The ground floor is normally rented to retailers who sell fresh food or ready-to-eat items. The upper level is occupied by retailers who sell ready-to-eat items or non-food products. The night market and farmer's markets are usually a street market. Here, retailers normally set up their own stalls along the roadside. These traditional markets provide opportunities for self-employment, as well as improving the level of income for small traders, farmers and young entrepreneurs (Malaysia 2001; Malaysia 2006).

Grocery stores or mini-markets emerged at the same time as the traditional markets. These stores are family-owned retailers that sell a limited variety of products such as fish, fruit and vegetables, bread and milk, stationery, toys and household supplies. Consumers prefer to shop at these stores given that the location is close to their house or place of work. However, consumers may limit their purchase from these stores due to the high prices and limited product lines. Furthermore, while these old retail formats still comprise around 25.0% of all retail sales in Malaysia (Shamsudin and Selamat 2005), the number of stores in the traditional retail food market is rapidly decreasing.

In the past, selecting their preferred retail store was seldom a problem for most Malaysian shoppers as there were few other stores available besides the traditional retail formats. According to Roslin and Melewar (2008), in the 1970's and 1980's, local sundry shops dominated the retail market in Malaysia. However, with the expansion of modern retail outlets, consumers can choose which retail format to visit depending on those factors that they perceive to be important.

According to McTaggart (1969) [cited in Roslin and Melewar (2008)], the development of modern retail outlets in Malaysia can still be considered to be relatively new. The Weld Supermarket was the first modern supermarket to be opened in Kuala Lumpur in 1963, and was initially built to cater for expatriates who were working and living in the city. During the 1970's, modern supermarkets started to expand with the entry of several foreign ventures into Malaysia. By 1984, Zainal Abidin (1989) [cited in Roslin and Melewar (2008)] was describing the 'supermarket war' in Malaysia.

The new emerging retail formats are hypermarkets, supermarkets and convenience stores. Generally, retailers are being differentiated on the basis of their retail size (Roslin and Melewar 2008). According to the Ministry of Domestic Trade, Co-operatives and Consumerism, hypermarkets are defined as those retail stores with a floor space in the range of 60,000 to 100,000 sq. ft (Zainal Abidin 1989; Roslin et al. 2002; Roslin and Melewar 2008). Supermarkets are classified as having a floor space ranging from 8,000 to 50,000 sq. ft.

Cheeseman and Wilkinson (1995) described supermarkets as self-service stores, which offer one stop shopping, value for money and hold a large product selection in pleasant surroundings. Trappey and Lai (1997) add that most supermarkets have facilities to process fresh foods and use a wide range of refrigerated facilities to hold chilled and frozen product. Although supermarkets' merchandise assortment is described as limited, their retail strategies resemble the hypermarkets (Roslin and Melewar 2008). Their strategies to attract consumers include focusing on the merchandise width and depth while maintaining a low price.

Convenience stores and petrol stations are new retail concepts in Malaysia. These stores represent around 11.0% of retail sales and are located in major urban centres and along highways to capture those consumers who prefer convenience (Pricewaterhouse Coopers 2006). In Malaysia, the main convenience store is 7-Eleven. It is estimated that there are around 120 convenience stores and 500 petrol stations. These stores offer a greater variety of products, longer hours of operation and lower prices compared to the traditional grocery stores or mini-markets.

In the past, modern retail formats have generally been built in larger cities which serve the rich and middle class (Reardon et al. 2003). In Malaysia, modern retail formats are mainly located in the major urban centres (Shamsudin and Selamat 2005). Most hypermarkets are located in the states where the population density is higher and more affluent – Selangor, Kuala Lumpur, Johor and Penang. Selangor has the highest number of hypermarkets (Mui et al. 2003). In 2000, there were 392 supermarkets and 22 hypermarkets in Malaysia (Table 2.16).

Table 2.16: Number of modern retails in Malaysia

Indicator	2000	2005	Average Annual Growth Rate (%) 2001-2005
Shopping complexes	392	550	7.0
Shop Units (‘000)	242	297	4.2
Hypermarkets	22	81	29.8
Foreign	16	68	33.6
Local	6	13	16.7

Source: Ministry of Domestic Trade and Consumer Affairs, Ministry of Entrepreneur and Cooperative Development and International Data Corporation.

Five years later, the number of supermarkets in Malaysia had increased to 550 and the number of hypermarkets had increased to 81.

Foreign-owned retailers dominate the retail sector in Malaysia (Table 2.17).

Table 2.17: Major retailers in Malaysia in 2004

Group’s Name	Ownership	Type of business	Number of stores	Net Sales (RM) million
Dairy Farm Giant Retail	Dairy Farm International Hong Kong	Hypermarkets, supermarkets and pharmacies.	222	2,458.6
Jaya Jusco	Jaya Jusco Stores Bhd, Aeon Group, Japan	Superstore chain and shopping center operation.	11	1,523.8
The Store Corporation	The Store Corporation	Departmental stores cum supermarkets, and hypermarkets.	38	1,162.8
Carrefour	Magnificent Diagraph, Carrefour, France	Hypermarkets	8	999.4
Tesco	Tesco, UK and Sime Darby Bhd, Malaysia	Hypermarkets	6	573.8
Makro Cash and Carry Distribution	SHV, The Netherlands	Hypermarkets	8	775.2
Parkson Retail Group	Parkson Corporation, retailing arm of Lion Group, Malaysia	Departmental stores and hypermarkets	31	414.2
Ngiu Kee Corporation	TKN Enterprise	Supermarkets and departmental stores	5	155.8
Ocean Capital	Ocean Capital Malaysia	Departmental stores and supermarkets	17	79.8

Source: Adapted from Arshad et al. 2006.

The foreign owned retailers include Giant (Hong Kong), Jaya Jusco (Japan), Carrefour (France), Tesco (UK) and Makro (Holland). Local retail chains include The Store, Parkson, Ngiu Kee Corporation, Ocean Capital, Mydin, Bintang, Billion and EconSave. In 2004, Giant recorded the highest net sales revenue, valued at RM2,458 million, followed by Jaya Jusco (RM1,523 million) and The Store Corporation (RM1,162 million). Giant dominated the market with a total of 222 stores, followed by The Store Corporation (38), the Parkson Retail Group (31) and Ocean Capital (17).

More recently, modern retail outlets have started to spread into small towns in rural areas. This is to penetrate the fresh food markets for the poor. It has been reported by Reardon et al. (2003) that in Chile, about 40.0% of small towns have at least one supermarket. In Thailand, supermarkets have started to spread to other provinces beside Bangkok (Chen et al. 2005). In Malaysia, two hypermarkets are located in Negeri Sembilan, where the population is lower than the developed states (Mui et al. 2003). Tey et al. (2008c) indicated that the second wave of modern retail development has seen hypermarkets open in Segamat, Banting, Nilai and other mid-sized towns in Malaysia.

Despite the development of modern retail outlets in Malaysia, ACNielsen (2006) reported that grocery stores/mini-markets continue to hold the largest share of the retail trade (49.0%) (Table 2.18).

Table 2.18: Value percentage of share of trade

Type of retailer	Value of share of trade (%)
Grocery stores/mini-markets	48.9
Supermarkets/hypermarkets	39.9
Independent supermarkets	19.9
Drugstore/pharmacy	9.0
Chinese medicinal hall	1.5
Convenience store	0.6

Source: Adapted from Roslin and Melewar 2008.

Supermarkets and hypermarkets were reported to have gained a 40.0% share. Not unexpectedly, the rapid development of these modern retail outlets has alarmed smaller retailers in the industry. In 1999, a study on the Impact of Hypermarkets on

Distributive Trade revealed that the expansion of hypermarkets had adversely affected the sales of 58% of the retailers in neighbouring areas where the hypermarkets were located (Malaysia 2001). Moreover, ACNielsen (2003) reported a sharp decline in the number of independent retailers operating grocery stores and mini-markets (Table 2.19).

Table 2.19: Total number of retailers in Peninsular Malaysia for 2000-2002

Type of retailer	2000	2001	2002	Change (%)
Hypermarkets	25	31	33	6.4
Supermarkets (standalone)	196	144	155	7.6
Supermarkets (in department stores)	203	272	282	3.6
Grocery stores/mini-markets	30,084	28,659	27,944	-2.5
Convenience stores	1,195	1,020	1,242	21.7

Source: Adapted from Roslin and Melewar 2004.

Given the number of grocery stores/mini-markets that have closed, Roslin and Melewar (2008) suggested that there was a need to evaluate the impact of the modern retail outlets on traditional traders. Although traditional traders were reported to be the victims of the intense competition from modern retailers, there are findings which suggest otherwise. Hafidz (2003) [cited in Roslin and Melewar (2008)] revealed how the shift in population from rural to urban areas and the development of market centres has contributed to the failure of traditional retail stores. Hafidz (2003) reported that the majority of store closures occurred mostly in rural areas rather than urban areas. Suryadarma et al. (2010) found that the expansion of modern retail formats had no significant impact on the profit and revenue of traditional retailers. Competition was more intense among the traditional traders rather than with modern retail formats. These results were supported by qualitative findings which reported how traditional traders continue to survive in the retail market, as a result of improvements in traditional market infrastructure, the organisation of street vendors and the implementation of better marketing management practices.

Although modern retail formats are dominating the food retail sector, supermarkets and hypermarkets generally concentrate on processed, dry and packaged foods, rather than fresh food items. The move towards fresh food lines is generally slow.

ACNielsen (2003) report that between 80% to 90% of Asian shoppers still use wet markets regularly. According to Goldman et al. (1999), supermarkets in other Asian countries like China, Indonesia, Japan, Singapore and Taiwan, are unable to dominate fresh food lines due to serious problems in handling the fresh food category. In the traditional markets, retailers are able to fulfil consumers' specific requirements such as requesting a specific size, quantity and quality. In terms of fish and meat items, consumers want it 'live and warm'. This situation cannot be experienced in modern retail outlets where most fish and meat items are frozen or chilled.

Despite the dominance of modern food retailers in the West, traditional retail formats are still important in Malaysia, for they continue to capture a high percent of the groceries purchased (57%), compared to only 31% for supermarkets and hypermarkets (Idris 2002). Consequently, both retail outlets are expected to coexist for some time to come.

2.5 Food service industry in Malaysia

According to Arshad et al. (2006), Malaysian households spend almost a quarter (24%) of their household income on the retail purchase of food. Retail food purchases include the consumption of food-at-home and food-away-from-home. Heng and Guan (2007) defined food-at-home as food prepared and consumed at home, while food consumed away-from-home included that food consumed in a diversity of food outlets such as restaurants, food courts and roadside stalls, or bought from these places and consumed at home. The Malaysian Department of Statistics (2000) report that expenditure on food-at-home has declined from 33.7% in 1973 to 20.4% in 2004/2005. On the other hand, the expenditure on food-away-from-home has increased from only 4.6% in 1973 to 10.8% in 2004/2005. The United States Department of Agriculture (USDA) report that the food service industry in Malaysia has been growing at around 7% per annum over the past five years (Stanton et al. 2009). As more Malaysians are consuming more food-away-from-home, there is a need to discuss the food service industry in Malaysia.

According to Heng and Guan (2007), the food service industry in Malaysia can be classified into five main categories (dine-in restaurants, fast-food outlets, coffee shops, food courts/hawker centres, and roadside hawkers).

Dine-in restaurants, which include coffee houses or restaurants in hotels and resorts, are normally air-conditioned food outlets. Many restaurants serve various cuisines ranging from Western menus (European, Continental, American), as well as Asian (Japanese, Chinese, Thai) and local delicacies. Other full service restaurants include foreign-owned restaurants such as Tony Roma and TGI Friday, or local origins (Secret Recipe and The Manhattan Fish Market) that meet the appetite of a growing middle class.

Most fast-food outlets provide Western-style menus such as McDonalds, Pizza Hut and KFC. Given that these food outlets are franchised, they must follow strict food preparation specifications and offer standardised prices (Heng and Guan 2007). There are also a number of café chains emerging such as Starbucks, Dome and Delifrance. Customers who often visit these food outlets are mainly young working adults and teenagers who demand quick service, and a clean and comfortable environment (Stanton et al. 2009).

Coffee shops, also known as *kopitiam*, have become the preferred place to dine out, for they offer popular menus such as local-grown coffee drinks, *nasi lemak*, toast and half-boiled eggs. Food courts or hawker centres are located in most major shopping malls and serve both local and Western-style cuisine. Roadside hawkers are hawkers peddling their food along the streets (Heng and Guan 2007). Customers are mainly attracted by the cheap food offered by these hawkers.

With the diversity of food outlets expanding in Malaysia, consumers have more choice as to where they will purchase their food. Studies by Radam et al. (2006) and Heng and Guan (2007) have found that socio-demographic characteristics (ethnicity, income and place of residence) have a strong influence on the consumption of food-away-from-home. Ethnicity is commonly associated with the level of income in Malaysia. Given that ethnic Chinese are commonly associated with wealth, Chinese ethnicity had a positive influence on the consumption of food-

away-from-home (Radam et al. 2006). Not unexpectedly, the total monthly income was also found to have a positive impact on the expenditure of food-away-from-home (Nik Mustapha et al. 2001; Ishida et al. 2003; Radam et al. 2006; Heng and Guan 2007). Radam et al. (2006) found that for each 1.0% increase in income, the expenditure on food-away-from-home increased by 0.8%. As a result of this, more wealthy households purchase more food-away-from-home.

Manrique and Jensen (1998) [cited in Heng and Guan (2007)], identified that the location where households reside (either in urban or rural areas) will also influence the expenditure patterns of the household when purchasing food. According to Radam et al. (2006), the level of economic development in Malaysia differs from one state to another. For example, fast-food chains such as McDonalds and KFC are concentrated in major cities (Radam et al. 2006). Due to traffic congestion in most urban areas, households often experience time constraints. Consequently, they may have no time to prepare food-at-home, which contributes to the increased consumption of food-away-from-home (Heng and Guan 2007).

Other socio-demographic characteristics such as age, education, gender and household size were reported to have limited effects on the consumption of food-away-from-home. Given that dining out has become a regular feature of the Malaysian lifestyle (Heng and Guan 2007), everyone regardless of age and education level may participate in this leisure activity. In terms of gender, Ong (1993) reported that there was little difference between male and female household members when it came to dining out. Heng and Guan (2007) added that it is not uncommon in Malaysia to see the whole household consume food-away-from-home as a group. Although findings by Nayga and Capps (1993) indicate that the consumption of food-at-home increases when family size increases, Heng and Guan (2007) found that household size had no significant influence on the consumption of food-away-from-home. Although it was noted that the total expenditure when dining out may be higher for larger households (Tey et al. 2009), they have the option to dine at food outlets such as food courts/hawker centres or roadside hawkers which provide food at a more reasonable price.

2.6 Chapter summary

Arshad (2007) mentioned that the food distribution system in Malaysia was restructuring as the level of education, personal disposable income and urbanisation has increased over many years. Consumers are becoming more demanding in terms of the quality and safety of their food, and thus they require more information about the food they plan to purchase and consume. As more food is being imported to overcome the inability of domestic food production to meet the demand, Malaysian consumers are now being exposed to greater problems with regards to the Halal status of the product and the safety and quality of the food.

In Malaysia, traditional retail outlets such as the wet markets, farmers' markets and grocery stores were once the sole channel from which to purchase fresh food. However, consumers today have more choice and accordingly, will purchase fresh food from those retail outlets which best fulfil their needs.

With the consumers' growing demand for food safety and their desire for a wider range of better food quality at more competitive prices, modern retail outlets have rapidly expanded their market share in much of South East Asia. Although Reardon et al. (2005) reports that the market share of supermarkets in retail food sales such as fresh meat and fruit and vegetables averages only 33.0% in several Southeast Asian countries, including Malaysia, it is anticipated that the supermarkets' market share will soon surpass the traditional retail markets. However, the speed at which supermarkets are replacing the traditional retail markets differs between countries, where the process may be occurring gradually or rapidly.

Besides competition from the modern retail formats, traditional retailers must also confront convenience food and the greater consumption of food-away-from-home. According to Ragaert et al. (2004), the consumption of semi-processed vegetables and pre-packed fruit is becoming increasingly common among consumers who place much importance on convenience. Magdelaine et al. (2008) mentioned that convenience foods such as marinated meat, cooked or ready-to-cook products, where the meat has been cut in cubes or slices, are becoming increasingly common among consumers in Europe. Ragaert et al. (2004) mentioned that convenience food

is generally bought and consumed during weekdays by younger consumers who are working outside the home.

The food service industry is therefore expected to grow as the Malaysian economy expands. Heng and Guan (2007) report that the consumption of food-away-from-home is rising. However, studies by Lin et al. (2001), Guthrie et al. (2002) and Variyan (2005) [cited in Heng and Guan (2007)] have shown that food-away-from-home is often less nutritious. With higher calories and cholesterol, the consumption of food-away-from-home is often associated with negative health effects. Therefore, consumers who are more health conscious may want to prepare more meals at home for their household's consumption.

Looking at the supply side, the presence of major retail players in the food industry is changing the production and distribution system. Smallholder farmers are being forced to collaborate to achieve economies of scale and contract farming is becoming more common (Arshad 2007). Modernisation of supply chains is anticipated to impact on all those involved, including smallholder farmers, wholesalers, retailers and consumers.

3. An overview of consumer behaviour with relation to their food purchase behaviour and the perceived quality model

3.1 Chapter outline

This chapter draws on the consumer behaviour and perceived quality literature to gain a better understanding of the stages involved, together with the various terminologies utilised in the consumers' decision to purchase fresh food. This is followed by a discussion of the motives involved (directly or indirectly), which may influence consumer's perceptions and experiences of food quality after purchasing fresh food from a retail store. A conceptual framework of perceived quality is then proposed for this study. The chapter ends with a discussion on the different behaviour consumers may exhibit when either satisfied or dissatisfied with their decision to purchase.

3.2 The importance of understanding consumer behaviour

Neal et al. (2007, p.6) defined consumer behaviour as the discipline dealing with how and why consumers purchase goods and services. Blythe (2008) indicates that until recently, the main focus of consumer behaviour research was about understanding why people purchase a product. According to Neal et al. (2007), consumer behaviour is a combination of both observable and non-observable behaviour. Observable behaviours include the amount purchased, when, by whom, and how the purchases were consumed, while the non-observable criteria consist of consumers' values, personal needs and perceptions, together with how consumers process and evaluate the information they gather prior to purchase.

Grainer et al. (1979) and Stanley and Robinson (1980) propose that consumers are often dissatisfied with the quality of the food they receive. A gap exists between producers and consumers, where producers are largely unaware of the dissatisfaction consumer's experience. Morgan (1985) identified this gap as the 'quality perception gap'. In order to reduce the gap, consumers should be at the core of everything that the firm does. As indicated by Blythe (2008), consumer behaviour focuses on customer retention, which places greater emphasis on customer service, customer contact and customer commitment.

According to Veeck and Veeck (2000), studies on consumer behaviour, specifically food purchase patterns in East Asia, are limited. Both researchers indicate that the consumption patterns observed for Western consumers may not always correspond with those observed in Asia. Goldman and Hino (2005) demonstrate that the economic development in the West, which shifted consumers to purchase food from modern retail stores, does not always occur for consumers in Asian countries such as Taiwan, Singapore and Hong Kong. Despite having access to supermarkets and hypermarkets, consumers prefer to purchase fresh meat and fresh fruit and vegetables from the wet markets (Goldman 1991; Goldman and Hino 2005).

Furthermore, consumer preferences in purchasing food are often dissimilar between countries. Whereas consumers in Argentina, Mexico, China and North America are not opposed to genetically modified food because of the lower cost, consumers in Western Europe and Japan were concerned about the potential hazards of consuming genetically modified products (Nielsen et al. 2003).

According to Neal et al. (2007), consumer behaviour is person, product or situation specific. This means that the way consumers purchase and consume a product may vary among products, or even when consumers repeat the purchase for the same product. Cultures, values and food shopping habits are expected to influence consumer behaviour (Veeck and Veeck 2000). Keast (2009) suggests that food quality perceptions are determined within the context of sensory (taste, smell, food texture, appearance) and non-sensory factors which include: (1) price; (2) convenience; (3) branding; (4) food processing (religious, ethical concerns, environmental considerations, animal welfare); (5) credence attributes (nutritional value, health benefits, production techniques); (6) cultural differences, and (7) food traditions (birthdays, weddings, special events), which in turn are subject to individual differences and situational factors. Moreover, Keast (2009) found that food quality perception is a subjective experience which is definable only by individuals, for the variables which were used to determine the quality of a product may not necessarily reappear on the next purchase occasion. Given that the food consumption patterns of Malaysian consumers are changing (Mohayidin and Samdin 2001; Ishida et al. 2003; Tey et al. 2008b) and there is a lack of information

about consumer behaviour related specifically to food purchase, this demonstrates the importance of undertaking this study.

3.3 Consumers' involvement in food products

Antonides and van Raij (1998) [cited in Juhl and Poulsen 2000] have defined involvement as the level of a consumer's personal relationship with a product or service, which includes perceived importance, value and risk. In general, the purchase of food is a low product involvement decision (Beharrell and Denison 1995). The reasons for this are supported by Verbeke and Vackier (2004), who indicate that food products have a low potential to reflect self-image because they are generally low cost items. Nevertheless, Beharrell and Denison (1995) found that a consumer's involvement in food shopping depends upon each product category. This results in differing levels of involvement and different behavioural outcomes. More recently, consumers have begun to show their interest in learning more about the whole system of food production. Consumers are becoming more concerned about food safety and the healthy aspects of food (Juhl and Poulsen 2000). This demands more information searching, evaluating more product attributes and weighing more beliefs, which in the end requires more problem solving (Verbeke and Vackier 2004).

Beharrell and Denison (1995) found that the levels of involvement for food products such as fresh meat, dairy and cereals was significantly higher than toiletries and cosmetic products.

3.4 Consumer motivations on food

The concept of human motivation was first introduced by Maslow in 1943 (Blythe 2008). The physiological needs, which include food and water, are among the most essential requirements for human survival. People are expected to fulfil their physiological needs first, followed by satisfying their other needs such as safety, the sense of belonging, esteem and self-actualisation.

Consumers have many motives which may influence their food choice. Consumer motivations are defined as a series of psychological factors which initiate the

decision-making process (Verbeke et al. 2006, p.620). Von Alvensleben (1997) suggested four motives which were considered by consumers when purchasing food. The primary motive is to satisfy a person's hunger. When the basic physiological motive has been fulfilled, food is also consumed for satisfying nutritional needs. This was supported by Rozin et al. (1999) who confirmed that the basic function of food is to provide nutrition and energy for physical well-being.

Safety is the second motive influencing the consumers' decision to purchase food (Von Alvensleben 1997). In 1996, the Food Marketing Institute reported that the majority of consumers thought that the food they purchased was safe (Wilcock et al. 2004). This emerged from the consumers' trust in the relevant government agencies and food processing companies that were responsible for ensuring food safety. Nevertheless, several researchers have shown that most consumers seldom implicitly consider food safety (Sockett 1995; Woodburn and Raab 1997; Worsfold 1997).

The third level of consumer motivation is the social motive, which comprises the sense of belonging, friendship and affection (Von Alvensleben 1997). Here, consumers may be more selective in their food choice when preparing food for special occasions. In Malaysia for example, the demand is higher for premium beef when celebrating the Eid festival.

The final motive is for consumers to fulfil their esteem, prestige and status needs (Von Alvensleben 1997). Often consumers select convenience food because of the lack of time to prepare food at home, thus consumers must choose between the convenience factor or "lower" motives such as the concern for a more healthy lifestyle.

3.5 Consumer behaviour models with respect to consumers' food choice

3.5.1. Steenkamp (1990)

Steenkamp (1990) focused on the theoretical concepts of the food quality perception process. A definition of perceived quality was developed and discussed

in the context of value. Relating perceived quality and value was developed from Rokeach's (1973) study of human values. Value was seen as the core concept in all social sciences. Value has been defined as a relativistic preference characterising a subject's interaction experience with some object (Holbrook and Corfman 1983, p.23).

Value is related to perceived quality through three dimensions; preference, subject-object interaction and consumption experience (Steenkamp 1990). Preference indicates an evaluative judgment, for example, whether the consumer prefers the food or some alternative. Perceived quality can also be subjective. Objective interaction occurs through comparison and is influenced by personal and situational contexts. Finally, perceived quality involves the consumption experience, where a product is valued for its purpose after consumption.

As a result of conceptualising perceived quality along the three dimensions of value, Steenkamp (1990) defined perceived quality as *an idiosyncratic value judgement with respect to the fitness for consumption which is based upon the conscious and/or unconscious processing of quality cues in relation to relevant quality attributes within the context of significant personal and situational variables* (p.317).

When consumers decide to select a particular food, their preferences are based on several sensory characteristics (taste and texture) and non-sensory characteristics (health, religious, ethics, etc). For example, each consumer perceives that the food they consume is influenced by the values and beliefs they possess. However, most consumers are largely unaware how the subconscious values and beliefs that they hold influence their food choices.

3.5.2. Oude Ophuis and Van Trijp (1995)

Oude Ophuis and Van Trijp (1995) have a different approach to defining perceived quality. According to these authors, quality can be seen from two different perspectives. The first perspective suggests that quality can be captured through experience, but cannot be analysed. The other perspective indicates that quality is

measurable through certain standards. Both authors support the latter perspective, but reinforce the need to understand and to define the standards.

In order to define perceived quality, Oude Ophuis and Van Trijp (1995) introduced a quality quadrant, which consisted of four Ps; perception, product, person and place. Perception is the overall judgment of the product characteristics (either visible or invisible), which the consumer could associate with or have experienced when evaluating the product.

The other three Ps; product, person and place, represent and relate back to the whole concept of perceived quality. Perceived quality is different, depending on the product category. For example, quality attributes such as leanness may be relevant to consumers when purchasing fresh meat. However, this attribute is not applicable to consumers when selecting fruit and vegetables from a retail store.

The personal factor is important, as the whole idea of perceived quality is based on an individual consumer's judgments. One person's understanding of perceived quality will be different from another person, since personal preferences and experience levels differ from one to another. Finally, place is associated with situational factors which influence perceived quality.

3.5.3. The Total Food Quality Model

The Total Food Quality Model (TFQM) was developed by Grunert, Larsen, Madsen and Baadsgaard (1996) [cited in Grunert 2002]. According to Grunert et al. (1996), the TFQM is a common framework which was developed as a result of emerging concerns about food quality and safety.

Grunert (2005) demonstrated that food quality could be examined through two different dimensions; horizontal and vertical. The horizontal dimension represents the time dimension, which investigates quality perceptions prior to and after purchase. By utilising the three quality attributes (search, experience and credence), consumers were expected to measure the quality of food before (quality expectation) and after purchase (quality experience). Consumers' satisfaction or

dissatisfaction with the purchase will reflect upon the cues that have been utilised in the purchasing process. It means that consumers' satisfaction or dissatisfaction was determined by the relationship between quality expectations and quality experience (Grunert 2002). Subsequently, the level of consumer satisfaction/dissatisfaction will then influence the likelihood of repeat purchase.

The vertical dimension involves the means-end approach, which Grunert (2005) describes as a more complex process. The means-end approach attempts to link product characteristics (quality cues) to the more abstract quality dimensions which are associated with consumer motivations (beliefs, attitudes) and values. When relating food with quality, the concept revolves around four central concepts: sensory characteristics, health, convenience and process characteristics (production) (Grunert 2005). For instance, consumers use colour and fat as quality indicators of the tenderness of meat.

The level of confidence consumers have in making this inference relies on their experience, knowledge and expertise. According to Grunert (2005), how consumers relate the product characteristics to the quality of the food is inexplicable.

3.5.4 Peri (2006)

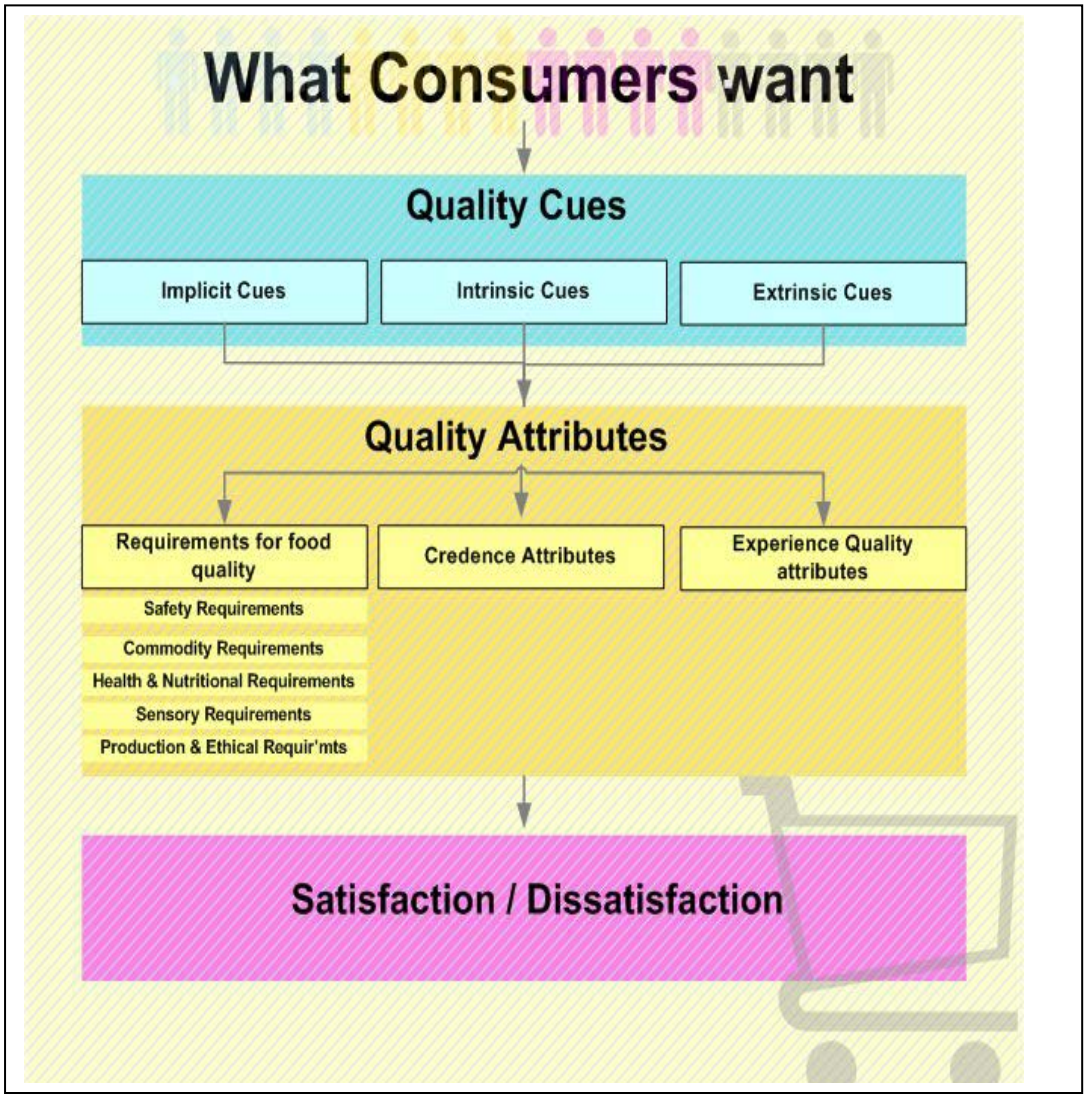
Peri (2006) presented a dynamic model of food quality which involved an on-going process to fulfil consumers changing needs. According to Peri (2006), consumers express their expectations and needs, which are also labelled as 'requirements', which are satisfied by the 'performance' of the product. Unlike Steenkamp (1990) and Grunert (2005) who utilised the concept of attributes, Peri (2006) utilised the concept of 'performance' to capture the importance of quality, which was comprised of safety, nutritional, sensory, functional, aesthetic, ethical and convenience. Additionally, the concept of 'performance' was observed when there was an interaction between consumers and products. 'Performance' was then derived from the 'characteristics' of the product. Peri (2006) further described 'characteristics' as the structural and objective data such as shape, weight, size, structure and composition of the product. The 'characteristics' of the product are obtained through the production process.

Through this model, Peri (2006) also highlighted the importance of being able to associate a product's performance with the consumers' expectations of the product's characteristics. Peri (2006) identified a significant barrier in the food industry where there is little communication between consumers, who emphasise the importance of 'performance', and producers, who are more concerned about the 'characteristics' of the product.

3.6 A conceptual framework for perceived quality

Based upon the theories and models discussed in the previous sections, a conceptual framework for analysing consumers' perceptions and experiences of food quality in purchasing fresh food from retail outlets in Malaysia is proposed (Figure 3.1).

Figure 3.1: A model of perceived quality



3.6.1 Quality cues

Quality cues are defined as information stimuli that are related to the quality of the product and can be ascertained by the consumer through the senses prior to consumption (Steenkamp 1990, p.312). Consumers are offered a large number of quality cues in the market. In the consumers' mind, desired cues are gathered and categorised, before making predictions of product quality. How the cues are gathered and categorised are based upon the beliefs and prior knowledge of the product that consumers have experienced. Quality cues include:

1. Implicit cues

These are derived from consumers' perception that the food they are about to consume is safe (Peri 2006). Similarly, Keast (2009) found that food safety is an implicit part of food quality, given that safety is what consumers expect when they purchase food. As mentioned by Hester and Harrison (2001) [cited in Keast 2009], consumers generally assume that all food available for consumption has met prior safety standards and requirements. Nevertheless, in some cases, the safety and reliability of the food supply system has being dampened by outbreaks such as the BSE crisis in Europe (Vos 2000) and the bird flu epidemic that hit Asia in 2004 (Abbott and Pearson 2004). Additionally, Wilcock et al. (2004) agreed that making an implicit assumption that the food supply is absolutely safe is impossible, given that there are many incidences where food-borne illnesses have not been reported.

2. Intrinsic cues

The concept of intrinsic-extrinsic cues was developed by Olson and Jacoby (1972) [cited in Oude Ophuis and Van Trijp 1995]. Intrinsic cues describe the physical attributes of the product, which cannot be changed or manipulated without changing the product itself (Oude Ophuis and Van Trijp 1995; Grunert 2005). According to Verbeke et al. (2005), intrinsic cues comprise both search and experience attributes. Consumers may be able to judge search attributes such as appearance, colour, shape, size and structure immediately when doing their food shopping, but, on the other hand, consumers can only evaluate the experience attributes such as taste, tenderness, crunchiness and juiciness after consuming the product.

In the buying process, search attributes were found to be significantly more important, while experience attributes were highly valued during consumption (Ragaert et al. 2004). Particularly in the purchase of fresh meat, consumers with a low degree of product experience may find intrinsic cues relatively less important compared to other quality cues (Brunso et al. 2002). Verbeke et al. (2005) added that intrinsic quality cues are strongly associated to the technological product specifications, which describe the biochemical or biophysical characteristics of the product. Subsequently, the technological product specifications are linked to the sensory attributes, which may then influence the consumers' perception of food quality.

When judging the quality of a raw piece of meat from a retail store, consumers may utilise and evaluate intrinsic cues such as colour, share of fat, fat marbling and meat juice. Brunso et al. (2002) demonstrated how the visual appearance of meat has a strong association with consumers' quality expectations. In the case of purchasing fresh vegetables, Bech et al. (2000) demonstrated how the colour of green peas was perceived to have a significant impact on the flavour. Ragaert et al. (2004) agree with Bech et al. (2000) that intrinsic cues are important evaluative criteria for determining the quality of the food once consumers have experienced it. In cases where intrinsic cues cannot be evaluated prior to purchase, consumers may then rely on other quality cues when ascertaining the quality of the food.

3. Extrinsic cues

According to Oude Ophuis and Van Trijp (1995), extrinsic cues are quality cues that are not related to the physical product, but become an important indicator when comparing between two or more products that are similar in appearance. Price and brand are the best known examples of extrinsic cues. Olson (1977) [cited in Zeithaml 1988] mentioned that in situations when consumers cannot obtain enough information and only refer to intrinsic cues to measure quality, price often appears to substitute for quality. Consumers often perceive that products with a higher price are of higher quality (Oude Ophuis and Van Trijp 1995). However, Zeithaml (1988) suggests that consumers utilise price to indicate the quality of the product when price is the only cue available. Zeithaml (1988) added that the utilisation of price as an indicator of quality depends on: (1) the availability of other cues; (2) differences

in price for products from the same category; (3) consumers' awareness of the price of the product, and (4) consumers' ability to detect quality variation in a group of products.

Brand name or label is another extrinsic cue which is widely applied in the food area (Oude Ophuis and Van Trijp 1995). As mentioned by Bowbrick (1992) [cited in Batt and Sadler 1999], a label attached to a specific product provides information about the specific producer, origin or retailer. Besides conveying information, labels aim to influence consumers with regards to the quality, reliability, social status, value for money or safety level of the product.

In the past, labels have not been widely utilised by consumers, but more recently they provide the only evidence of intangible characteristics such as how the food was produced (McEachern and Schroder 2002).

Grunert (2005) demonstrated how brand names are now widely used to infer the quality of a product. In the food area, Caswell (2000) and Verbeke et al. (2008) illustrated how labels, which signal quality, may transform credence attributes into search attributes, where consumers are able to judge the quality of a food product before purchase. For meat, consumers have started to show an interest in areas such as origin, food safety, information regarding the producers and the production process after numerous food scares (Krystallis and Arvanitoyannis 2006). Sepulveda et al. (2008) agreed that brand names and labels infer not only high meat quality, but also demonstrate a connection to credence attributes such as health and nutrition. Brand names are important in reducing the uncertainty and the risk involved when purchasing food (Grunert 2005; Krystallis and Arvanitoyannis 2006).

In most developing countries where consumers still visit their traditional butchers to purchase fresh meat (Veeck and Veeck 2000; Lapar et al. 2009), the personal contact with their preferred butcher is seen as replacing the value of the brand name (Krystallis and Arvanitoyannis 2006). However, alongside the emergence of modern retail outlets, quality indicators such as brand names or labels start to influence a segment of the market.

For fresh produce, when search attributes such as freshness, size and colour do not always enhance the consumers' consumption experience, consumers may turn to other criteria such as brand (Batt 2009). However, Batt and Sadler (1999) revealed that for the majority of consumers, labels on apples were not always associated with superior quality. Fruit that was labelled did not taste any better, nor did it look any better. For potatoes, Fernqvist and Ekelund (2009) demonstrated how Swedish consumers preferred to purchase unbranded potatoes. In a similar study, the brand was considered least influential for consumers' in Western Australia when purchasing fresh potatoes from a retail store (Batt 2009). As mentioned by Batt and Sadler (1999), the problem with labels is that most growers label their produce, irrespective of quality.

Oude Ophuis and Van Trijp (1995) illustrate how building a brand name can be both lengthy and costly. In forming quality expectations for fresh meat, Grunert et al. (2004) mentioned that branding is a method for a seller to signal a superior quality product, which then reduces consumers' uncertainty and encourages consumers to pay a premium in order to purchase better quality products. Sepulveda et al. (2008) demonstrated that quality-labelled beef was often associated with a higher price, given that quality-labelled beef underwent more quality control. Fernqvist and Ekelund (2009) reported that besides offering better packaging, new varieties and pursuing organic certification, branding of potatoes is an alternative strategy to differentiate the product and achieve a higher price.

In order to capture the higher quality perception that most consumers associate with brand name, most modern retailers are establishing their own private brands (Grunert 2005). Most often, generic products carrying retailer brands are being offered at a much lower price. As a result of this, according to Grunert (2005), consumers perceive these products as being of lower quality.

3.6.2 Quality attributes

Quality attributes are defined as the functional and psychosocial benefits or consequences provided by the product (Steenkamp 1990). Becker (2000) suggested that product attributes are those features of a product that meet the needs of the

consumer. This implies that quality attributes are the expected benefits that a consumer will experience after consumption. Thus, the quality attributes of a product capture what the consumer really wants.

In this research, quality attributes were categorised as: (1) the requirements for food quality, (2) credence attributes, which particularly focus on Halal, and (3) experience quality attributes.

3.6.2.1 Requirements for food quality

With regards to food, Peri (2006) introduced a total of five requirements for food quality, which include:

1. Safety requirements

This revolves around the absence of risk. This is further described by Batt et al. (2006) as controlling biological, chemical and physical contaminants. Food safety requirements for fresh produce are important compared to other types of agricultural products (Martinez and Poole 2004). According to Shepherd (2006), the quality and safety of fresh produce affects the whole production and marketing chain; from the soil used to cultivate the crop, polluted water if used for irrigation and washing harvested produce, untreated manure, and handling by retailers and consumers in the store. Although the presence of microbial contamination brings serious threats to human health, consumers cannot detect the presence of dangerous substances such as viruses, bacteria and parasites on the fresh produce they purchase. Therefore, trusting the retail outlet or usual vendors from whom they buy is one way of ensuring that the produce they purchase is safe to eat. However, as much of the fresh produce purchased is consumed raw or with minimal preparation, the problem is accentuated. The extensive use of agrochemicals can also compromise food safety, for studies in Asia have repeatedly demonstrated that the usage of these agrochemicals is seldom in accordance with label recommendations (Shepherd 2006).

In McCluskey et al. (2005), consumers in the US ranked the importance of food safety over price in their purchase of fresh meat. Similarly, Krystallis and

Arvanitoyannis (2006) illustrated how consumers in Greece were more concerned about food safety in their purchase of fresh meat, which included freedom from microbial contamination and hazardous chemicals. In China, consumers have also ranked safety as the most important attribute when purchasing beef from a retail store (Liu et al. 2006). This was due to the lack of strict quality controls for food production in China.

The availability of unsafe food in the market has partly dampened consumers' confidence level when purchasing food from a retail store. As a result of this, not only are food producers taking action to regulate food safety, but also food retailers (Havinga 2006). Quality control in modern retail outlets has the potential to improve food quality and safety. For instance, Havinga (2006) found that Dutch retailers decided to adopt the British Retail Consortium (BRC) standard as their own food safety assurance scheme. The BRC standard for British supermarkets contains comprehensive norms with regard to food safety and quality systems, product and process management, including: (1) the use of a food hygiene and safety control system based on HACCP; (2) the adoption of a documented quality management system, and (3) the control of factory environments, products and processes through a defined and documented organisational structure (Arfini and Mancini 2003; Havinga 2006). In developing countries, Henson and Reardon (2005) found that some supermarket chains have their own initiatives to develop private food safety standards for products which were categorised as "risky" (fresh fruit and vegetables, fresh meat and dairy products). Although food safety regulations exist in developing countries, Henson and Reardon (2005) note that some governments may not have the capacity to monitor and enforce these policies. Grievink et al. (2002) [cited in Havinga 2006] mentioned that both manufacturers and retailers may be affected if any major food safety issues emerge. Therefore, adopting food quality and safety standards are seen as a method to: (1) reduce risks and liability costs, and (2) encourage consumer confidence in purchasing food products. The emergence of more modern retail outlets is seen as a threat to traditional retailers, given that supermarkets and hypermarkets offer more quality and safe food to consumers.

2. Commodity requirements

These are defined as the conformity of the product according to the law (Peri 2006, p.4). Given that supermarkets and hypermarkets have huge buying power, Wheelock (1992) found that these modern retailers have the resources to develop specifications for own-label brands. Farmers and suppliers who wish to supply to these modern markets must conform to these specifications. These specifications are developed in order to respond to the demands of the consumers. Similarly, Reeves and Bednar (1994) noted that the establishment of specifications must meet consumers' needs and wants. According to Humphrey and Schmitz (2001), questions which revolve around product standards can be referred to the product itself (the physical characteristics such as size and colour in conformance to particular standards) and/or to the process (is the product being produced in ways which conform to specific requirements). Humphrey and Schmitz (2001) then added that the main reason to meet these specifications is to minimise risk, which mainly involves food safety, concerns about labour, environment and animal welfare.

As food safety issues are greater for fresh food products than other agricultural products, governments worldwide have enacted a raft of food safety legislation to protect consumers. The demand for food safety globally has raised concerns about the impact of food regulators on international trade, particularly towards the developing countries (Martinez and Poole 2004). As a result of this, managing food safety systems through implementing Hazard Analysis Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and International Organisation for Standardisation (ISO) standards are seen as strategies towards improving food quality management (Selamat and Hassan 2000; Merican 2000; Unnevehr 2000). The benefits are felt not only by consumers, but also by society at large.

According to Selamat and Hassan (2000), HACCP is a process control system that identifies where hazards might occur in the food production process and provides stringent actions to prevent the hazards from occurring. Maldonado et al. (2005) notes the benefits of implementing HACCP in the Mexican meat industry, as reducing microbial counts, being able to attract new customers, gaining access to overseas markets, and increasing product shelf-life. The adoption of HACCP in the

food industry is prominent in most developed countries, where Unnevehr and Jensen (1999) confirmed that countries such as the European Union, United States of America and Australia have mandatory programs to encourage the adoption of HACCP programs. Nevertheless, Selamat and Hassan (2000) and Merican (2000) report that the implementation of HACCP for food companies in Malaysia is still voluntary. Zulkifly et al. (2008) revealed that fulfilling food safety requirements was a problem for most small and medium-sized food enterprises in Malaysia. Besides costs, the lack of understanding of proper hygienic practices on food production lines, the need to have proper quality control and food safety procedures, and the lack of advanced technologies were identified as barriers towards the implementation of HACCP. Developing countries are foreseen as facing difficulties in meeting the higher levels of sanitary and phytosanitary regulation demanded by importing countries (Martinez and Poole 2004).

3. Health and nutritional requirements

This is one of the main purposes of eating. Consuming nutritious food provides health benefits and strengthens the body against diseases (Peri 2006). In China, Liu et al. (2006) report how consumers with higher education levels identified beef as a nutritious food item which was good for health. In Krystallis and Arvanitoyannis (2006), the health quality attributes were found to be important for consumers who desire health in their diet. Such consumers gathered information about the nutritional value of the product and the production method. In contrast, Pollard et al. (2002) mentioned that a healthy balanced diet could be obtained by reducing the consumption of meat products.

Brug et al. (1995) demonstrated how consumers in The Netherlands placed great importance of the perceived health benefits of consuming fresh fruit and vegetables. Consuming fresh fruit and vegetables was perceived to be more healthy because of the consumption of vitamins, the ability to lose weight and the reduced likelihood of succumbing to many diseases. Health was mentioned as an important quality attribute by consumers in relation to their fresh fruit and vegetable purchases (Pollard et al. 2002).

Furthermore, consumers are increasingly turning towards products with low fat, low sugar, no preservatives and no artificial colours or flavour enhancers (Lappalainen et al. 1998; Prescott et al. 2002). Cade et al. (1999) found that people who placed more importance on their diet and maintaining a healthy lifestyle were willing to spend three times more to purchase fresh fruit and vegetables.

4. Sensory requirements

In Becker (2000), characteristics such as taste, flavour, tenderness, leanness, juiciness and texture were grouped as sensory characteristics. These sensory characteristics are also known as experience quality attributes, which are experienced at the time of consumption. As indicated by Oude Ophuis and Van Trijp (1995) and Pollard et al. (2002), taste is the most important experience quality attribute for food. McCarthy et al. (2003) mentioned how sensory attributes such as taste play a part in the consumer's level of 'eating enjoyment'. Taste is based on an observation of the food, and is influenced by the environment, geography, demography, socio-demography and psychological variables (Sijtsema et al. 2002). Generally, women perceive taste, flavour and texture as being more important than men (Ragaert et al. 2004). When consumers consume food, the taste sensation is evaluated to determine whether the product is good or otherwise.

During the purchasing process, particularly for fresh meat, consumers may not have the opportunity to taste the food prior to consumption. Oude Ophuis and Van Trijp (1995) mentioned that some interaction between intrinsic and extrinsic quality cues with the experience quality attributes existed. For instance, search quality cues like colour, marbling, leanness, place of purchase, price and country-of-origin are cues that may enable the consumer to assess the eating quality of the meat while shopping (Becker 2000). According to Peri (2006), sensory requirements connect food and consumers.

In the purchase of fresh meat, Grunert (1997) demonstrated how taste was the most important attribute when purchasing meat among European consumers. Egan et al. (2001) conducted a comparison study between two groups of consumers and found that Australian consumers preferred tenderness and fineness of texture in their beef, whereas Japanese consumers preferred a stronger taste. Taste and eating quality

were also mentioned as important quality attributes by McEachern and Schroder (2002) in the consumers' choice of fresh meat, along with price, fat distribution and colour. McCarthy et al. (2003) observed how consumers' perceptions of good taste lead to a positive attitude towards the product.

Taste was among the important factors for Dutch consumers in their decision to purchase fresh fruit and vegetables (Brug et al. 1995). Wandel and Bugge (1997) found that the quality properties for fruit and vegetables were determined by taste and freshness. For potatoes, almost half of the 1,103 respondents in Norway rated taste as the most important indicator for quality. Similarly, Abbott (1999) mentioned that consumers incorporate sensory characteristics such as taste, appearance, aroma, flavour, hand-feel and mouth-feel to evaluate quality and to make a final judgement in accepting or rejecting the fruit and vegetables they intend to purchase. However, Pollard et al. (2002) noted that the taste of fruit and vegetables is subjective and differs between individuals. Pollard et al. (2002) added that the inability to taste certain compounds may result in consumers rejecting the food.

5. Production and ethical requirements

According to McEachern and Schroder (2002), the consumers' values, which are influenced by their belief system, should be analysed in defining food quality. Consumers are concerned about how, when and where their food has been produced. As mentioned by Grunert (2005), consumers are interested in learning about process-related qualities. These include food safety, sustainability of agricultural production systems, genetically modified food, animal welfare, farm labour conditions and child labour (Steenkamp 1990; Oude Ophuis and Van Trijp 1995; Becker 1999). The production and ethical requirements are often grouped as credence attributes (Grunert 2005).

In meat production, European food safety legislation protects not only consumers, but also responds to aesthetic and ethical issues such as genetic modification of animals, animal housing, animal nutrition and the usage of antibiotics (McEachern and Schroder 2002). Furthermore, in McCluskey et al. (2005), Bonne and Verbeke (2006), and Krystallis and Arvanitoyannis (2006), consumers have shown their

concern towards the application of growth hormones to animals. A greater respect for the welfare of the animals, is of concern for a growing segment of consumers (Wandel and Bugge 1997; Blokhuis et al. 2003; Brunton 2009). However, in practice, McEachern and Schroder (2002) and Wandel and Bugge (1997) suggest that it is difficult for most consumers to focus on ethical issues when purchasing fresh meat, given that they need to pay more for these higher value products.

In the purchase of fresh fruit and vegetables, organically grown produce is a common issue often raised by consumers. Harper and Makatouni (2002) provide a thorough description of organic food, which covers food content (no pesticides and no genetically modified ingredients), food production methods (produced naturally using environmentally friendly methods), food values (healthful and safe to eat), and social class (organic produce is most often consumed by consumers from the higher socio-economic classes). Beside the concern for the production method, Grunert (2005) mentioned that consumers perceived organically grown produce to have a superior taste compared to conventionally grown produce. Yiridoe et al. (2005) reported on consumers' attitudes toward organic food and their preferred quality attributes (health, taste, food safety, and concern towards the environment).

In Asia, county-of-origin is currently perceived to be the most important piece of information consumers require in their decision to purchase a particular food product (Batt et al. 2006). Furthermore, consumers are showing a greater interest in the ethical values of food production, which includes organic agriculture, concern for the environment, animal welfare and worker welfare (Becker 1999; Peri 2006).

In Malaysia, Prescott et al. (2002) demonstrate that Malaysian consumers are placing more emphasis on health, natural content (no additives, natural and no artificial ingredients), weight control and convenience, rather than any ethical concerns in their choice of food products. Ahmad and Juhdi (2008), have found that Malaysian consumers have a greater knowledge of organic food and believe that by consuming organic food, they can confidently contribute to the preservation of the environment.

3.6.2.2 Credence attributes

These denote features of the product which are considered important by the consumer, but are not experienced directly in consumption (Becker 1999).

Besides placing much importance on purchasing food that is safe and healthy to eat, Bonne and Verbeke (2006) demonstrate how religion influences consumers' attitude towards the food that they have purchased. In a Muslim country such as Malaysia, eating food that is Halal is considered important. Generally, Halal means permissible to eat according to Islamic rulings. Halal has been defined by the Malaysian Halal Standard MS 1500:2004 as food permitted under Islamic law and to have fulfilled the conditions of; (1) the food or ingredients do not contain any non-Halal products which are not slaughtered according to Islamic law; (2) the food is safe and not harmful; (3) the food is not prepared, processed or manufactured using equipment that is contaminated; and (4) during the preparation, processing, packaging, storing or transportation, the food is physically separated from any other food that is non-Halal. The definition of Halal includes the production process, handling method and the safety of meat products. Bonne and Verbeke (2006) add that the slaughter method under Halal includes some consideration for animal welfare and respect for animals.

As a result of uncertainty during the purchasing process, it is expected that consumers will utilise other intrinsic and extrinsic cues in order to evaluate credence attributes. In Bernues et al. (2003), animal feeding and origin were the two main extrinsic cues to predict the safety level of the meat (credence quality) by consumers from European countries. van den Heuvel et al. (2007) demonstrated how the physical characteristics of tomatoes have a significant effect on consumers' health perceptions.

The slaughtering method (credence attribute) was found to be the most important attribute for Muslim consumers in Belgium when purchasing fresh meat (Bonne and Verbeke 2006). Given that the slaughter method cannot be verified by consumers even after consuming the food, they associate this attribute with the place of purchase, where they trust their butcher, who is also Muslim, to deliver Halal meat.

According to Bonne and Verbeke (2008a), Muslim consumers most trust their family and friends, followed by Islamic butchers, to obtain information about Halal meat. In an asymmetric market, Becker (1999) mentioned that credence quality could also be verified by experts (sellers) who have more information about the product than consumers (buyers).

According to Riaz (1996) [cited in Ahmed 2008], the utilisation of labels to indicate that the food product is lawful for Muslim consumption is still low. Subsequently, the number of Muslim consumers that highlight the importance of Halal certification (labels) on food products is increasing (Abdul et al. 2008). In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is the sole agency responsible for certifying a particular food product or a food outlet as Halal and being fit for consumption by Muslims. In Belgium, Muslim consumers placed the most confidence in Islamic institutions to supervise the Halal meat chain and to introduce Halal labels (Bonne and Verbeke 2008a).

As more food is being purchased from modern retail outlets, Bonne and Verbeke (2006) reveal that besides convenience and food safety, consumers were also searching for Halal food in supermarkets. Younger consumers particularly dislike purchasing household products at one retail shop, and prefer to purchase fresh meat from their preferred butchers in traditional outlets. At the same time, Ahmed (2008) reported that Halal-labelled fresh meat was better presented in modern retail outlets in contrast to fresh meat in traditional retail markets. Nevertheless, Bonne and Verbeke (2006) and Ahmed (2008) agreed that not all consumers were confident in the Halal label attached to the meat products sold in supermarkets, due to the uncertainty and sceptical attitude they had about the genuineness of the Halal label.

3.6.2.3 Experience quality attributes

According to Becker (1999), in order to grasp the quality attributes, a consumer has to actually consume the product to experience the quality. Grunert (2005) has similar thoughts, describing the experience quality attributes as being evaluated after purchasing the product. This suggests that the quality expectations formed by consumers rely on several quality cues that could be either verified or contradicted

once the consumers experienced the food. Becker (1999) proposed the term ‘eating quality’ rather than ‘experience quality’ on the basis that the new term was more understandable by consumers.

Becker (2000) demonstrated how search quality or quality in the shop (intrinsic and extrinsic cues) were used by consumers to infer the experience quality. For instance, in the purchasing of meat, Krystallis and Arvanitoyannis (2006) revealed how consumers used the visual quality cues such as leanness and colour to determine the taste. Batt (2004) found that consumers tend to associate the colour of potatoes (yellow skin and flesh) with potatoes that tasted good and cooked well.

As mentioned by Bernues et al. (2003), meal preparation is also an important factor influencing experience quality. Bredahl (2004) demonstrated a relationship between expected quality and meal preparation methods, together with sensory quality to determine experience quality. Grunert (2005) proposed that meal preparation or the home production process was more important for the overall quality experience than the quality of the product itself. For example, an individual with good cooking skills may be able to prepare a good meal even from an average piece of meat. Conversely, a high quality piece of meat may deliver a bad taste or texture if it is not cooked appropriately.

Although food is purchased continuously, according to Grunert (2005), quality perceptions towards the product may change over time. On the first purchase occasion, the consumer relies heavily on quality cues that the consumer has never experienced. During the second and following purchase occasions, consumers are expected to utilise quality cues, as well as their previous experience in consuming the product. If the experience is good, consumers may utilise the same quality cues for the next purchase. However, if they encounter an unpleasant experience after consuming the food, consumers will then make use of different quality cues.

According to Becker (1999), information from newspapers and word-of-mouth is important to communicate the characteristics of the product to consumers. Furthermore, quality signs such as labels and brand names have been found to influence consumers’ quality perceptions of meat (McEachern and Schroder 2002;

McCluskey et al. 2005; Krystallis and Arvanitoyannis 2006; Sepulveda et al. 2008) and fresh fruit and vegetables (Beharrell and MacFie 1991; Caswell 2000; Batt 2009; Fernqvist and Ekelund 2009). Becker (2000) mentioned that brand names have to have some confidence value and represent a strong signal of quality. In relation to experience quality, products containing brand names and labels may reduce the probability of product failures. In marketing products such as apples, Arfini et al. (2008) demonstrated that one of the strategies of supermarkets is to collaborate with producers that already have a good reputation among consumers. This is because a recognisable brand blends with consumers' experience to establish expectations of product quality. According to Becker (2000, p.3), reputation of the product is a means to reduce the quality erosion inherent in experience quality attributes.

In the case of fresh food items that are sold unpacked or unbranded, the absence of brands and names may constrain consumers' ability to make predictions about the quality of the product. This is however, a common experience for Malaysian consumers, given that products such as fresh meat and fresh fruit and vegetables are sold unpacked and without labels or brand names, particularly within traditional retail markets. Ou et al. (2006) agreed that this is the norm for grocery products such as meat, fresh fruit and vegetables, where brands are usually absent. In brand absent circumstances, Dawar and Parker (1994) and Bell (1999) [cited in Ou et al. 2006] found that consumers tend to associate the retailer's good reputation with product quality. If the retailers' reputation is favourable, consumers will have higher purchase intentions because they perceive that the products offered by these stores will be of higher quality. It is similar for the case of meat, where crucial information which involves food safety may be lost by the time the product reaches the retail store (Ubilava and Foster 2009). As a result of this, consumers are forced to use indirect indicators such as the reputation of the retailer, gained from experience, to signal product quality.

3.6.3 Satisfaction/Dissatisfaction

The final component of the model is to examine the relationship between quality expectations utilised by consumers during the purchasing process, together with

their experience of consuming the food and their level of satisfaction or dissatisfaction with the product. As indicated by Bredahl (2004), experience quality affects consumers' future purchase decisions. According to Swan and Combs (1976) [cited in Mowat and Collins 2000], satisfaction occurs when the expectations of a product raised at the point of sale are met or surpassed by the experience of consumption. As a result of consumers' satisfaction, acceptance occurs when consumers repeat their purchase. Giese and Cote (2000) mentioned that the definition of satisfaction varies across many research areas. However, the various definitions are similar in several aspects: (1) consumer satisfaction involves an emotional or cognitive response; (2) the response relates to a particular focus such as expectations of the product or consumption experience; and (3) the response occurs at a particular time after consumption or is accumulated over time from the consumers' experience.

According to Rousseau (1987), dissatisfaction is greatest when the product fails to perform its basic functions. Although the literature does not provide a clear conceptualisation of dissatisfaction (Giese and Cote 2000), when consumers are dissatisfied they are more likely to express feelings of anger, disappointment, upset, and to feel cheated or aggrieved.

The response to dissatisfaction is most often focused on the core product attribute – the food does not taste good or the basic product attributes were not delivered. According to Grunert (2005), given that consumers are often not good at predicting experiential quality, this may result in the disconfirmation of expectations and dissatisfaction. Ndubisi and Ling (2005) indicate that dissatisfaction is the opposite of satisfaction, where the product falls short of expectations.

In Wandel and Bugge (1997), about 80% of consumers were well satisfied with the quality cues and quality attributes utilised in their purchase of meat, fresh fruit and vegetables. Acebron and Dopico (2000) mentioned that for products such as meat, consumers could experience either satisfaction or dissatisfaction over the product, given that it is often difficult to purchase meat of the same quality on the next purchase occasion. For fruit products, Brug et al. (1995) revealed that consumer satisfaction and acceptance were the key indicators of success in supply chains.

Henderson (2002) [cited in Shewfelt and Henderson 2003] found that consumers in the US were dissatisfied with the flavour and texture of fresh fruit, whereas for fresh vegetables, they were most often dissatisfied with the appearance.

Liu and McClure (2001) found that the way consumers deal with dissatisfaction varies across western and non-western cultures. In Malaysia, it is typical for consumers not to complain when they experience dissatisfaction with a product, and they often blame themselves (Ramayah et al. 2003).

Hirschman (1970) [cited in Singh 1991] mentioned that consumers have three options when they are dissatisfied; (1) voice; (2) loyalty; and (3) exit. Voice is when consumers direct their complaints to the retailer in an attempt to initiate changes in their future purchases. When consumers actively voice their disappointment over a product or service, Day and Landon (1977) [cited in Ramayah et al. 2003] categorised the behaviour as public or private action. Public action describes consumers' complaining to businesses, private or government agencies, and taking legal actions to seek compensation. On the other hand, private action is when consumers spread negative words about the products or services to warn family members and friends. According to Rousseau (1987), consumers who complain are highly articulate, educated, and have higher standards when selecting products.

Loyalty is when consumers act passively (neither voice nor exit) over their feelings of dissatisfaction. Warland et al. (1975) categorized these consumers as 'the upset but no action' group. These consumers seldom complain, and they continue to stick with dissatisfying products, suffering in silence in the hope that there will be some improvement in the product or service offered (Singh 1991). According to Ramayah et al. (2003), a consumer who does not respond in any manner towards a dissatisfied product, and continues to behave normally to the retailer belongs to this group. According to Rousseau (1987), it is misleading for businesses to rely solely on complaint letters as indicators of their product performance, given that there are many dissatisfied consumers who wish to remain anonymous.

Singh (1991) describes exit as those consumers who voluntarily terminate an exchange relationship by switching their patronage to a substitute product, service,

or shifting to a competitor. Beside complaining or taking actions, consumers reaction to dissatisfaction may include switching stores (Rousseau 1987; Galbreath and Rogers 1999; Liu and McClure 2001; Ndubisi and Ling 2005).

4. A review of the factors influencing the consumer's choice of retail food store[1]

4.1 Chapter outline

This chapter draws on the store choice literature to gain a better understanding of the drivers behind store choice behaviour. The chapter begins by exploring the reasons for the emergence of supermarkets and hypermarkets. Subsequently, the factors which most influence the consumers' choice of retail food store will be discussed. The chapter concludes with a summary and implications.

4.2 Introduction

The modern supermarket first emerged in the USA in the late 1920s and early 1930s (Lo et al. 2001), as traditional retail formats were seen to be cost ineffective and inefficient. Besides offering better products and services to consumers, the modern supermarket was seen to provide a means by which retailers could achieve economies of scale and greater efficiency. By the early 1950s, the supermarket concept had started to expand to other countries such as Japan, Malaysia and the Philippines. By the 1960s, supermarkets had entered Hong Kong and during the 1980s, supermarkets were entering mainland China.

Several push factors have influenced the emergence of modern retail formats across the globe. One of the main factors has been the limited opportunity for supermarkets to expand in their domestic markets. By 1973, the French government had introduced legislation to protect small traditional retailers from the competitive influence of both national and international supermarket chains (Kamah and Godin 2001). Companies such as Carrefour, which were affected by this legislation, had to seek growth opportunities elsewhere. In both Europe and the USA, as domestic markets were already saturated, expansion into the developing economies provided the only opportunity for growth (Wong 2007).

[1] The following chapter was developed from Chamhuri, N. and Batt, P.J. (2009), Factors influencing the consumer's choice of retail food store, Stewart Postharvest Review, 3:1. Published online 01 June.

At the same time, economic growth in such regions as Latin America, Asia and Africa provided pull factors that contributed to the rise of modern retail formats in these regions. An increase in personal disposal income changed both the consumer's lifestyle and their shopping behaviour. Today, consumers are mainly concerned about safe, hygienic and good quality food. As a result of changing lifestyles, modern consumers in Singapore, Malaysia, Thailand, Indonesia and China prefer to shop at supermarkets or hypermarkets which provide convenience, comfort, cleanliness and quality (Glover 1999).

The rapid growth in personal disposable income has also increased the ownership of both refrigerators and microwave ovens (Reardon and Berdegue 2002; Shamsudin and Selamat 2005), which has changed the purchasing habits of consumers. In the past, perishable goods were bought from food markets on a day-to-day basis. As refrigerators have the capacity to store perishable goods for 1 – 2 weeks, consumers now shop less often. It has been reported that 42.0% of consumers visit a supermarket one time per week (Glover 1999). Correspondingly, the percentage of consumers who visit supermarkets more than four times per week is relatively low – about 7.0%. With greater access to refrigerators and the increased private ownership of cars, consumers can purchase and transport larger quantities of goods at one time (Shepherd 2005).

Increasing urbanisation is another factor that has increased the demand for modern retail formats. With more women entering the work force, time is scarce and therefore the demand for convenience is high. Shepherd (2005) described modern families as "cash rich, time poor". Convenience means more than just a one-stop store concept for working women. Modern retail outlets provide convenience for shoppers in terms of providing facilities such as car parking, trolleys and baskets, proximity to other shops, extended trading hours, improved presentation of products, signage, and the width and depth of the product range (Geuens et al. 2003).

Within both developed and developing economies, food safety has become a growing concern among consumers (Shamsudin and Selamat 2005; Shepherd and Galvez 2007; Wong 2007). The high incidence of pesticide residues in fruit and

vegetables, outbreaks of food borne-illness, and food containing unsafe ingredients has enhanced food safety and food quality awareness across the globe. More affluent, highly educated consumers in both Malaysia and the Philippines are willing to pay more for premium branded food in order to obtain more safe and healthy food (Lantican and Esguerra 2006; Wong 2007). Due to food safety preferences, consumers are beginning to purchase fresh produce from modern retail outlets (Tam n.d.). Modern retail outlets have become a trusted source from which consumers purchase food that they believe is safe.

Despite good opportunities for international food retailers to grow their market share in developing countries, the literature often provides contrary evidence (Goldman et al. 2002). While supermarkets and hypermarkets have been operating for quite some time in countries such as Singapore, Hong Kong, Thailand and Taiwan, their market share is reported to be less than 50.0%. Furthermore, the supermarkets share of fresh food sales in both developed and developing countries is often lower than their market share for processed food (Humphrey 2007). Gulati and Reardon (2007) clearly demonstrate that modern retailers have a relatively large market share in non-food items (94.0%), and packaged and processed goods (79.0%). However, supermarkets hold less than 50.0% of the market share for meat (46.0%), fresh fruit (37.0%), poultry (35.0%), fish (33.0%) and fresh vegetables (22.0%).

4.3 Drivers behind store choice behaviours

According to Sinha and Banarjee (2004), store choice is a cognitive process. It is related to the mental processes involved in gathering knowledge and understanding information to decide where to purchase certain products. As mentioned by Alhemoud (2008), store choice behaviour focuses on analysing the principal attributes that influence a consumer's shopping decisions. Alhemoud (2008) added that in determining the preferred place to shop, the consumer's decision to purchase was not made solely on one attribute, but rather, it involved a set of attributes. Solgaard and Hansen (2003) mentioned several store attributes such as merchandise quality, personnel, store layout, cleanliness and accessibility as among the most

important factors which consumers utilised when evaluating the store they intended to visit.

Food can be categorised as fresh and processed. In developed countries, the sales of packaged food is estimated to be more than half of total food expenditure (Batt 2007). However, the sales of packaged food are only one third or less in developing regions. In Southeast Asia, the growth in total food expenditure is increasing at a rate of 5.4% per annum, whereas sales in the food sector are increasing at 7.9% per annum (Digal 2008). It was reported by Hughes (1999) [cited in Batt 2007] that food preparation time in the home is declining. In 1994, food preparation time was estimated to be 15 minutes. By 2010, food preparation time is expected to fall to just eight minutes. This implies that speed and convenience are important meal preparation attributes, leading to an increasing demand for semi processed food and convenience food which can best be satisfied by shopping from modern retail outlets.

A total of seven themes were identified as the major drivers which most influence the consumer's decision to purchase food from either a modern retail outlet or the traditional markets. Although several other factors were identified, these are discussed under various sub-themes. The factors are not ranked according to importance.

4.3.1 Personalised service by traditional vendors

One of the strategies small retailers employ to protect themselves from the large modern retailers is to improve their level of service, rather than to attempt to compete on price (Klemz and Boshoff 2001). Although food is a frequently consumed product, the decision to purchase often entails considerable risk, for at the time of purchase, most consumers are unable to accurately determine the experiential (eating) quality. Therefore, providing superior service to consumers in the form of better quality product and better knowledge is one way of enhancing store loyalty (Sinha and Banarjee 2004; Bustos-Reyes and Gonzales-Benito 2008).

Findings from a study conducted in India revealed the importance of having a good relationship with retailers (Sinha and Banarjee 2004). In order to compete with modern retailers, several traditional "kirana" shops have introduced new services such as home delivery, replacement of defective products and credit facilities. These small retailers believe that excellent service will enhance the shopping experience for consumers, thus increasing the probability that consumers will shop there again.

Traditional retail formats have an advantage in that most have developed close enduring relationships with consumers (Farhangmehr et al. 2001; Goldman et al. 2002; Sinha and Banarjee 2004; Figuie et al. 2006). In Vietnam, with repeat transactions and over time, personal relationships between retailers and consumers develop. Trust is important in the customer-retailer relationship for two reasons (Figuie et al. 2006): (1) when trust is present, consumers, especially from the lower income groups, can get access to credit. Similarly, Baron et al. (2001) identified that traditional retailers had the capacity to offer their regular customers informal credit services; (2) trust is an assurance given by vendors that the food is safe and of high quality. As price is not always a good indicator of product quality, the personalised service provided by traditional vendors provides a concrete reason for many consumers not to purchase from modern retail formats (Sinha and Banarjee 2004).

Gravano (1988) [cited in Placencia 2004] described a corner shop as a place where people know one another. Baron et al. (2001) suggested that respondents identified the success of traditional retailers who rely heavily on: (1) the warm and friendly services being offered, where the shop is seen as serving the community and the owner generally knows most customers by name; and (2) a smooth operation which offers a quick service and a wide range of products. Placencia (2004) suggests that customers who shop at corner shops engaged in social activities with the shop owners such as greeting and leave-taking exchanges, how-are-you inquiries, and queries about health and family. The frequent interactions create rapport between both parties and as a result of this, the shopping experience when visiting a corner shop became more pleasurable. The personalised services offered by traditional retailers are unique and cannot be easily replicated by competitors.

Consumers in developed countries have different reasons for shopping from modern or traditional retail formats. In Portugal, one of the reasons consumers prefer to shop from supermarkets is the wide variety of products available where one can buy everything under one roof (Farhangmehr et al. 2001). Nevertheless, Aylott and Mitchell (1999) indicated that the process of finding goods in supermarkets can turn grocery shopping into a stressful experience. In the UK, consumers report that shopping in supermarkets can be frustrating when consumers are unable to locate a product and sales support staff are not available.

Some consumers may feel that it is important for the store to provide them with knowledgeable and helpful sales assistants. According to Walton and Huey (1993) [cited in Arnold and Fernie 2000], customers are loyal to Wal-Mart as a result of the better treatment they received from sales assistants than sales persons from competitor stores. As mentioned by Arnold and Fernie (2000), shoppers are greeted by the same person at the entrance in order to create recognition and familiarity. This welcoming approach becomes personal for customers, and turned the large warehouse into a familiar neighbourhood shop. Although the presence of sales assistants is essential for infrequently purchased products such as electronic appliances and furniture, they are still valuable in assisting consumers when purchasing grocery items (Burke 2002). Consequently, the attribute labelled as "personnel", which described the friendliness of staff and knowledgeable personnel, was also an important factor for consumers when doing their grocery shopping at supermarkets (Alhemoud 2008). The in-store service provided by these modern retail formats is seen as an approach to maintain and improve the relationship between retailers and their customers.

4.3.2 Competitive price

Price is a convincing tool which attracts consumers to purchase from a particular retail outlet (Farhangmehr et al. 2001; Goldman et al. 2002; Sinha and Banarjee 2004; Skallerud et al. 2009). In marketing, price is the means by which consumers are informed about the value of the product. Invariably, when it comes to price, consumers tend to visit different types of retail store to shop around for the best price. Piachaud and Webb (1996) [cited in Ellaway and Macintyre 2000] revealed a

price difference of 60.0% between the prices charged for several identical food products at supermarkets and corner shops in the UK. Ellaway and Macintyre (2000) revealed that price was an important consideration when purchasing food for consumers who belonged to the lower income group compared to more wealthy consumers. According to Arnold and Fernie (2000), price would be less mentioned by consumers in determining their preferred store choice if the variations were small among competing retailers.

In the early stages of development, modern retail formats first opened in large metropolitan cities that targeted high income earners and expatriates (Lo et al. 2001; Goldman et al. 2002). Generally, these products were sold at higher prices than those prevailing in the traditional retail market. This arises because the modern retail formats often experience high operating costs such as high rent and high wastage. Furthermore, it is difficult to lower the prices of many products as the items offered for sale are imported.

With higher prices portraying an image that shopping at supermarkets is only for the more wealthy consumers, poor consumers choose not to shop at modern retail formats because of their reluctance to associate with more wealthy people (Tam n.d.). Many of them visit modern shopping precincts purely for entertainment.

However, in order to capture a larger segment of consumers, modern retailers have begun to sell basic food commodities (rice) at a much lower price than traditional retailers (Minten and Reardon 2008). Subsequently, other more durable packaged foods such as noodles and oil have also been sold at a lower price to attract more customers. In the late 1990s, modern retailers began to aggressively enter the fresh produce market (Reardon and Berdegue 2002; Minten and Reardon 2008). As a result of this, they were able to offer fresh food products at a much lower price.

There is within the literature, much debate about which retail store format offers the lowest price. From a face-to-face survey of consumer perceptions in Portugal (Farhangmehr et al. 2001), it was reported that prices in traditional retail shops were higher. In Taiwan, data collected by Hsu and Chang (2002) revealed that several fresh meat products in the traditional markets were sold at higher prices compared

with supermarkets. A comparative study by Liese et al. (2007) identified that the prices of meat, fruit and vegetables sold at convenience stores in the US was higher than at supermarkets and grocery stores.

Conversely, in Kenya and Vietnam, consumers buy fresh fruits and vegetables from the traditional market due to the lower price (Tam n.d.). Several focus group participants in the UK revealed that they do not shop at supermarkets because they think that the goods sold there were overpriced (Aylott and Mitchell 1999). A price comparison study in Hanoi, Vietnam, confirmed that food prices in supermarkets were higher than the traditional markets (Tam n.d.).

In Thailand, the Thailand Development Research Institute (2002) [cited in Minten and Reardon 2008] reported that although the prices for processed food products was 12.0% cheaper in modern retail outlets, fresh food items were considerably more expensive (10.0% higher) than what was available in the traditional market. Natawidjaja et al. (2007) [cited in Minten and Reardon 2008] found that fresh tomatoes sold in traditional markets in Jakarta were cheaper than the tomatoes available from supermarkets. In India, Minten et al. (2010) revealed that the prices of fresh produce were not displayed to consumers, given that buyers were expected to bargain on the price with the retailer. On average, the final price agreed by both parties were cheaper compared to similar products sold in supermarkets. Overall, Minten and Reardon (2008) concluded that modern retail outlets were more price-competitive in processed foods such as rice, bread, noodles, sugar and milk, rather than in fresh foods.

In reality, modern retail outlets are capable of offering more competitive prices as they have the advantage of the economies of scale in procurement. Wal-Mart manages to offer products to customers at a much lower price due to their low cost strategy, which includes: (1) volume buying which lowers the cost of goods; (2) assisting vendors to achieve cost reduction; and (3) monitoring competitor stores to ensure that the products available at Wal-Mart are always the lowest priced in the market (Arnold and Fernie 2000). Furthermore, competition between the major retailers will drive prices downward (Arshad et al. 2006).

4.3.3 Food quality and safety

The concept of quality is essential to bring value and satisfaction to the consumer (Oude Ophuis and Van Trijp 1995). According to Batt (2007), quality is a multifaceted concept that can be defined differently according to individual perceptions.

In the past, consumers were primarily concerned about purchasing goods at a low price. Today, consumers have shifted their focus towards quality and gaining value for money. In Greece, consumers have indicated quality and variety as the key determinants in deciding from which store to purchase groceries (Baltas and Papastathopoulou 2003). In Scotland, McEachern and Schroder (2002) identified quality and taste as the most important criteria in selecting fresh meat. In Spain, consumers mentioned the importance of price, quality and the brand (Flavian et al. 2001). Among Japanese consumers, quality and freshness were most valued (Kawahara and Speece 1994). In Vietnam, consumers considered quality and freshness when purchasing fresh produce from either modern or traditional outlets (Figuie 2003). This is similar among the Nepalese, where quality was ranked as the most important attribute in the decision to purchase fresh produce (Singh 2006).

With higher education and increasing income, consumers are becoming more demanding. In the UK, major supermarket chains are creating their own identities by selling products that carry their own label (Brookes 1995; Pattanatorn and Sutton 2007). Tesco has introduced own-label produce to create an overall quality image for the retail chain. Although most fresh produce is sold in pre-packs, loose produce with no brand name or packaging is still available. Tesco's own-label provides three different brands to cater for three different consumer market segments. Sainsbury's are attempting to compete in the fresh produce sector by positioning themselves in the market with the slogan "Good food costs less at Sainsbury's". Loblaws from Canada has introduced a "President's Choice Green" range of products (Brookes 1995). Foodtown in New Zealand have introduced the slogan "Quality costs no more" for their fresh produce range.

However, some supermarkets sell fresh produce at a higher price. These retail outlets charge higher prices because they focus on quality (Minten and Reardon 2008). For example, supermarkets in Chile are offering top quality meat and fine cuts to serve the demand from high-income shoppers (Faiguenbaum et al. 2002). The apples available in modern retail outlets in India were generally high quality imported fruit (Minten et al. 2010). While Balsevich et al. (2003) suggested that supermarkets offer higher quality produce to compensate for the higher prices consumers have to pay, Minten et al. (2010) suggested that it was difficult for modern retailers to offer food items at a lower price as they had to control for quality.

When buying fresh fruits and vegetables from traditional retail outlets, freshness was the most important quality attribute valued by consumers. In Hong Kong, a study among food shoppers revealed that consumers purchased fresh vegetables from traditional markets as the produce was perceived to be "more fresh" (Kawahara and Speece 1994; Goldman et al. 1999). Given that the vegetables had been delivered directly from the wholesale market and that vendors constantly trimmed, sprayed, cleaned and sorted, consumers perceived the quality to be superior to that available in supermarkets. Faiguenbaum et al. (2002) found that consumers in Chile rejected the perception that better quality produce was offered by modern retail outlets. Consumers perceive that fresh produce in supermarkets has often been stored and refrigerated for some time. Furthermore, consumers added that there was often insufficient choice when buying fresh produce in supermarkets as most of the produce was pre-packed. In Vietnam, consumers perceived that vegetables were fresher if purchased in the wet markets or from street hawkers. Consumers in Vietnam preferred to buy fruit and vegetables daily and in small quantities because eating fresh food was important in their diet (Tam n.d.).

4.3.4 Convenience

According to Reimers and Clulow (2004), convenience takes place when the barriers in accomplishing an activity are reduced or totally eliminated. The concept of convenience is related to consumers' effort, in terms of their mental and physical

energy, spent in buying, storing and preparing food (Buckley et al. 2005). In retailing, the concept of convenience is determined by the attributes which influence the spatial, temporal and effort costs of patronage (Reimers and Clulow 2004).

As mentioned by Boyle (2002), Reimers and Clulow (2004), Buckley et al. (2005) and Scholderer and Grunert (2005), there are several motives why the importance of convenience is growing among shoppers. The motives were identified as: (1) the increasing levels of consumer awareness, affluence and mobility; (2) time insufficiencies (longer working hours); (3) the changing role of women (from a homemaker to full or part-time employment); (4) an increase in the number of male shoppers, and (5) the size of the family. Popkowski Leszczyc et al. (2004) indicated that as the demands of professional and personal life have increased, this has resulted in shopper's desire to minimise the time spent shopping.

According to Kirby (1986), small independent food and grocery stores have continued to prosper because they offer convenience to their patrons in terms of location (close to the house), parking facilities, offering a wide range of goods, and longer trading hours. However, Peston and Ennew (1998) [cited in Baron et al. 2001] argue that the concept of convenience, as portrayed by traditional retailers, is gradually shifting to supermarkets and hypermarkets.

In response to the consumers' need for convenience, the major retailers have developed a mix of retail outlets. The concept of one-stop shopping applies when supermarkets or hypermarkets are built, for they attract other stores such as bakers, post offices and banks under the same roof. For instance, traditional grocery stores in Canada are transforming into large superstores, where shoppers have the opportunity to purchase clothes, toys and crockery at the same time (Popkowski Leszczyc et al. 2004). In Malaysia, Shamsudin and Selamat (2005) reported that shoppers in urban areas prefer to purchase from supermarkets and hypermarkets because of the one-stop shopping experience. Ahmed et al. (2007) suggested that the one-stop convenience concept has also resulted in the emergence of service outlets such as food-courts and restaurants, as well as entertainment outlets like video arcades, bowling alleys and cinemas. According to Kaufman and Lane

(1996), the chance for success is higher when a shopping centre delivers a clear and well-positioned mix. Without a mix of outlets, for the convenience seeking shoppers, there is a greater of possibility of them visiting another retail outlet. Popkowski Leszczyc et al. (2004) added that the latest trend in food shopping is towards multi-purpose shopping behaviour, which contradicts earlier findings which assume that shoppers tend to visit the nearest store when buying food.

Darian and Cohen (1995) [cited in Scholderer and Grunert 2005] suggested that the concept of convenience could be examined from the savings in time and the physical or mental energy which shoppers expend when purchasing food from their preferred retail store. Chetthamrongchai and Davies (2000) have grouped the 'time-pressured convenience seekers' as those shoppers who are young, educated, and have good jobs. However, they were found to dislike food shopping. Given that time is valuable for them, they purchase in bulk, perform one-stop shopping at supermarkets and hypermarkets, drive their own transport to and from the retail store and are less likely to purchase from other stores which are located some distance from their house or office. In Boyle (2002), the concept of one-stop shopping is described when the shopper goes to one store and purchases in bulk for a time period (of a week or a fortnight) to save on time and travelling costs. In a similar study, Scholderer and Grunert (2005) found that shoppers, who have a positive attitude to convenience shopping, see little value in shopping from speciality food shops.

Longer trading hours are also perceived to be more convenient. Supermarkets and hypermarkets are open most evenings, on Sundays, and some even offer 24 hour shopping (Kaufman and Lane 1996). In Belgium, many respondents emphasised the importance of convenience when shopping, and would like to see retailers open until late at night (10 or 11 p.m.) everyday (Geuens et al. 2003). In Australia, Jacenko and Gunasekera (2005) noted that larger supermarkets have extended trading hours, enabling consumers to shop in one location at one time. As a result of the deregulation in trading hours in Australia, small retailers have lost their competitive advantage and are struggling to compete against the large retailers.

Besides the temporal aspect of convenience, several other characteristics also describe convenience in shopping, including the usage of trolleys and baskets, easy access to products, easy parking, quick/fast checkouts and payment methods. The trolleys and baskets provided by most supermarkets and hypermarkets are seen as a convenient device to transport groceries inside the store and from the store to the car (Zinkhan et al. 1999; Geuens et al. (2003). In Pettigrew et al. (2005), trolleys were perceived to be the second most important service element by supermarkets in meeting the needs of older shoppers. On the other hand, consumers were required to bring their own shopping basket when purchasing from the traditional market, which was an inconvenience for most shoppers.

Adebanjo (2001) noted that the accessibility of the product on the shelf was among several factors which determined the level of customer satisfaction within a retail store. Female shoppers rated the ability to reach products more importantly than male shoppers (Pettigrew et al. 2005). However, many respondents indicate that supermarkets do not always cater to the consumers' needs for product accessibility because they often experienced some difficulties in attempting to reach products on high shelves. Conversely, older consumers prefer to purchase their groceries from local stores as it was easier to access the product (Ong and Phillips 2007).

Geuens et al. (2003) revealed that shoppers dislike looking for a parking space when doing their grocery shopping. Therefore, it is an absolute necessity for retailers to provide a large parking area for their patrons. In Brazil, shoppers mentioned that it was more convenient to purchase food from supermarkets because of the ease of parking their cars compared to the traditional market (Zinkhan et al. 1999). Similarly, in Hsu and Chang (2002), more working women were found to shop from supermarkets because of easy parking. However, Abu and Roslin (2008) reveal that some Malaysian consumers prefer to shop for food from grocery stores because they are more convenient and it was possible to park closer to the store.

A fast checkout was among the factors in determining food store choice by consumers in the developed countries (Goldman and Hino 2005). Elderly consumers in Malaysia revealed that the existence of long queues at checkout counters was an inconvenience they experienced when purchasing from

supermarkets (Ong and Phillips 2007). Conversely, the experience of paying was less stressful in most grocery stores as there was no need to wait and no long queues (Abu and Roslin 2008).

According to Klee (2004), there is a correlation between the method of payment and the number of items bought at a particular store. These findings suggest that consumers who purchase a large amount of goods are more likely to use credit cards, while consumers who purchase less are more likely to pay by cash. Therefore, the usage of credit card facilities is higher in supermarkets and hypermarkets. According to Zinkhan et al. (1999), the credit card is a popular method of payment when consumers shop at supermarkets. Similarly, credit cards were the most preferred method of payment when consumers purchased from supermarkets in Turkey (Kurtulus and Nasir 2006). Although elderly consumers have access to credit facilities, Ong and Phillips (2007) reveal that the preference for this type of payment was low when purchasing groceries. Conversely, Sinha and Banarjee (2004) found that some consumers prefer to shop from traditional shops because they were able to buy on credit or to repay in instalments.

4.3.5 Proximity

Where the food retail outlet is located has been found to be an important factor influencing the consumer's choice of retail store. Brown (1991) considers location to be among the most important factors attracting shoppers to purchase from a retail store. However, retail location is a multifaceted construct that considers: (1) the consumers' preference to visit the nearest store where the goods they want are available; (2) the distance consumers are prepared to travel in order to make the purchase; (3) personal mobility, and (4) the trip frequency.

Goldman et al. (2002) identified the importance of location compared to other factors such as price and assortment in the consumers' choice of retail food outlet. Ellaway and Macintyre (2000) ranked location and the accessibility of the shop higher than the service provided by the retailer and the price. Similarly, Yilmaz et al. (2007) found that consumers placed great importance on a convenient location (closeness of store to personal residence and accessibility to the market).

Consumers in India have also indicated how important proximity is when purchasing fresh fruits and vegetables from a retail store (Sinha and Banarjee 2004).

There is a relationship between the proximity of the store chosen by consumers and the travelling time (Lo et al. 2001; Goldman et al. 2002; Sinha and Banarjee 2004). Assuming each factor influences store choice equally, consumers will decide where to shop based on the minimum travel time to the nearest retail store (Lo et al. 2001).

This then leads to a discussion on the mode of transport. Most modern retail outlets are built in central locations. However, they are more accessible by car. Therefore, higher income earners have fewer problems gaining access to the shopping precinct. Besides providing a greater variety of product at lower prices, the ample free parking offered by modern retail formats attracts consumers (Farhangmehr et al. 2001).

Lo et al. (2001) report that modern retail outlets are usually first established in large metropolitan cities to serve expatriates and high-income earners. More affluent consumers, it seems, are more readily able to change the location where they shop. Furthermore, higher income consumers have more storage and transport options and prefer the convenience of one-stop shopping. Conversely, lower income groups value more the social interaction and service provided by traditional retail formats (Goldman et al. 2002).

Which retail format is closer to home is considered an important driver for consumers. A study conducted in Vietnam demonstrates that the main reason consumers shop at traditional retail formats was because that retail outlet was located near to their home (Tam 2006; Figuie et al. 2006). Frequent purchasing among low income groups in Vietnam is more common, due to limited storage capacity and the inability of low income consumers to afford the time and travelling cost incurred in shopping from supermarkets. Similarly in China, where bicycle ownership is more common than owning a car, the limited carrying capacity and limited storage space in the home prevents most consumers from buying in bulk from supermarkets (Lo et al. 2001).

Besides income, the choice of retail store can also be influenced by other demographic characteristics of the consumers such as age and lifestyle. Lumpkin et al. (1985) [cited in Oates et al. 1996] mentioned that location and easy parking were among the primary determining factors of store choice for elderly consumers. Oates et al. (1996) found that older consumers who were retired but still active in sports or politics, or an active member of an association, had a limited time to shop. As a result, they select those stores which are in close proximity to where they live. In contrast, Ou et al. (2006) found that elderly shoppers who are retired have more time to travel and to shop around compared to younger shoppers.

4.3.6 Promotion

Promotion is a communication program which aims to create awareness, as well as to build and maintain relationships by informing and persuading customers to view the product and/or organisation favourably (Pride et al. 2004, p.138). Rix (2007, p.430) reveals that promotion is an element of the marketing mix which aims to inform, persuade or remind the market about a particular product and/or organisation. Rix (2007) added that the ultimate objective of promotion is to influence consumers' feelings, beliefs and behaviour. Consequently, through promotional activities, retail stores may increase their turnover by achieving a higher penetration rate in the market, increase the frequency of shopping and increase the average amount spent in the store (Volle 2001). In this section, the discussion will focus on loyalty programs, advertising and in-store tasting as various in-store promotional methods which may influence consumers' store choice and purchasing decision.

Sharp and Sharp (1997) describe loyalty programs as structured marketing efforts which provide customers with loyalty incentives such as points redeemable for prizes or discounts. Similarly, Leenheer et al. (2007) defined loyalty programs as an integrated marketing system which aimed to transform members into loyal shoppers. According to Demoulin and Zidda (2008), loyalty programs are part of a defensive marketing strategy offered by retailers.

One of the advantages of offering loyalty cards to shoppers is the information acquired about customers shopping behaviour. According to Mauri (2003), the data gathered from customers (who are they, frequency of purchase, buying behaviour) is then transformed into knowledge to develop more effective marketing strategies. In addition, Sharp and Sharp (1997), Uncles et al. (2003) and Demoulin and Zidda (2008) mention that loyalty cards create a better relationship between retailers and their customers.

Most major grocery retailers including Tesco (ClubCard), Sainsbury (Reward Card) and Safeway (ABC Card) introduced loyalty cards in the 1990s (Mauri 2003). The largest consumer loyalty program in Australia is Coles Fly Buys (Sharp and Sharp 1997). Shopping points were offered to loyal customers for store patronage, which can then be redeemed for free air travel or hotel accommodation. ACNielsen (2005) [cited in Demoulin and Zidda 2008] reported that European and American shoppers were often members of several loyalty programs with a number of grocery retailers. However, customers who are satisfied with the reward schemes offered by a specific retailer are less likely to be influenced by other reward schemes offered by competitors.

According to Sharp and Sharp (1997), loyalty programs are different from other marketing campaigns such as advertising and sales promotions. When an advertising campaign or sales promotion comes to an end, there is a tendency for consumers to revert back to their previous purchasing behaviour, whereas the aim of loyalty programs is to lock customers in.

With regards to advertisements in the mass media, Becker et al. (2000) mentioned that consumers utilised information from advertisements and newspaper articles to know more about news updates such as BSE, the origin and brand of the meat, as well as the quality of the food. Similarly, McEachern and Seaman (2005) reported that consumers in the UK utilised information from the media to gather knowledge about quality standards and information in connection with the food industry. Printed catalogues, advertising on radio and posters as promotional instruments for grocery items were found to have a weak relationship with consumers' store choice behaviour (Volle 2001). Although the findings by past researchers have indicated

that promoting food items through the media have little impact on store choice, retailers should not stop advertising.

In-store tasting is another strategy that may be utilised by retailers. According to Barlow et al. (2004), retailers who allow their customers to utilise their senses (taste, sight, smell and touch), by giving them the opportunity to evaluate products in-store will lead to a more rewarding shopping experience. Clark (1998) reported that one major retailer in the UK came up with a campaign called 'try before you buy', which provided an opportunity for shoppers to taste the food before purchase. Other supermarkets have utilised in-store tasting as a means to illustrate the superior taste of organic products to motivate potential buyers (Richter et al. 2000). Retailers found this strategy to be successful in justifying the price premium shoppers have to pay when purchasing organic products. Where the market awareness of a particular product is relatively low, supermarkets have utilised in-store tasting as a marketing strategy to attract more shoppers to purchase fruit (Mowat and Collins 2000). In a similar manner to modern retailers, those who shop at traditional markets in Brazil are often allowed to taste the products prior to making a purchase decision (Zinkhan et al. 1999).

According to Chang and Burke (2007), shopping aids such as in-store tastings may assist shoppers in their decision to purchase when there is insufficient information available about the product.

4.3.7 Demographic characteristics of consumers

In many developing countries, modern retail formats have struggled to gain acceptance. This is due to differences in demographic characteristics between consumers. In Hong Kong, it is not the norm for shoppers to buy fresh produce from supermarkets (Kawahara and Speece 1994).

According to Carpenter and Moore (2006), the individual characteristics of consumers will influence their consumption behaviour. By utilising information which identifies the demographic characteristics of consumers, it is possible for

retailers to segment the market, and thus to respond in a more appropriate way to consumers needs and wants (Baltas and Papastathopoulou 2003; Jin and Kim 2003).

Studies on gender differences have demonstrated some interesting differences between male and female shoppers. Generally, women have a more positive attitude towards food shopping than men (Chebat et al. 2009). Moreover, women perceive food shopping to be more important in their personal life. In both developed and developing countries, females are responsible for the majority of food shopping (Goldman et al. 1999; Ellaway and Macintyre 2000; Farhangmehr et al. 2001; Flavian et al. 2001; Baltas and Papastathopoulou 2003; Ou et al. 2006; Tam n.d.).

Burke (2002) reported that female shoppers were more responsive towards changes in price and promotional variables such as coupons and assistance from salespersons compared to men. Similarly, Alhemoud (2008) reported that female consumers in Kuwait placed greater importance on having friendly and knowledgeable staff to assist them when they shopped compared to males. In the same study, male shoppers were more concerned with the product range and accessibility (parking and ease of walking through the aisles).

In terms of age, supermarkets are the preferred place to shop for young shoppers in China and Hong Kong (Kawahara and Speece 1994; Lo et al. 2001). Burke (2002) described younger shoppers (below the age of 25) as a group of people who perceived shopping as an enjoyable and entertaining activity. Given that their source of income has yet to stabilise, this group of shoppers are price hunters; preferring price reductions and promotions, and are willing to travel to those stores that sell product at the most competitive price. Younger shoppers rely more on the television and the internet to search for product information to compare and evaluate products compared to older shoppers. Furthermore, in a retail store, younger shoppers were more receptive to the use of self-checkout systems to scan and pay for the products they purchased. While older shoppers value assistance from sales people, younger shoppers dislike the presence of sales people because they want to find items in the store themselves (Burke 2002).

Conversely, older shoppers continue to visit the traditional markets (Goldman et al. 1999). In the USA, older shoppers, who were presumably retired, have the time to travel to destination stores compared to younger shoppers who lead a busy lifestyle and have no time to shop around (Ou et al. 2006).

In relation to income, Ellaway and Macintyre (2000) reported that respondents who reside in the more affluent neighbourhoods (particularly females), place greater importance on quality in choosing between retail stores. These findings concur with research conducted by Zenk et al. (2005) who found a positive relationship between income and the propensity to purchase from supermarkets. Similarly, Moore and Diez Roux (2006) concluded that more small grocery stores were found in poorer neighbourhoods, whereas more wealthy areas were found to have more supermarkets.

On the other hand, much of the research shows no relationship between store choice behaviour and demographic variables. Ellaway and Macintyre (2000) found no significant differences between age groups and store choice. Jin and Kim (2003) found no significant difference between consumers' shopping motives and their demographic characteristics.

4.4 Chapter summary

Modern retailers have expanded from their original niche – which previously focused on fulfilling the needs of high income earners, to serve a larger segment of the market (middle class and low income earners, as well as people in rural areas). As a result, consumers have more choice on where to purchase their fresh food.

From this review, it was evident that there is an emerging body of literature that discusses the future of small independent retailers operating in traditional markets. Traditional markets will continue to survive as many consumers still appreciate the benefits that they bestow. Nevertheless, there is a tendency for more affluent food shoppers to change their shopping habits and shift towards modern retail outlets. Competition will intensify for traders, vendors and hawkers in the traditional market to remain in business.

The literature review disclosed that one of the strengths of traditional retailers is offering a personalised service which is much appreciated, more so by their female customers. Modern retailers are aware of this and have started to narrow the gap. If they are to survive, traditional retailers must find an additional means of differentiating their product offer to encourage shoppers to continue purchasing from them. One of the greater challenges for traditional retailers is to provide safe and high-value fresh food to their consumers, due to the lack of capacity in terms of storage space, a clean display area, and efficient transportation from suppliers to retailers. Although the safety and quality requirements impose higher costs, traditional retailers should endeavour to improve their standards to improve their image, as well as to gain the consumers' confidence. As highlighted by Reardon and Gulati (2008), it is important for government to assist small retailers to meet the challenges and requirements of the modern food marketing system.

5. Preliminary research methodology

5.1 Chapter Outline

Little information is currently available to identify the criteria Malaysian consumers employ when purchasing fresh food from various retail outlets. In the first exploratory stage of the data collection process, this chapter will discuss the focus group interviews which were used. The chapter will describe the exploratory research design, preliminary research objectives, sample selection, interview format and the structure of the survey instrument. The chapter concludes with a description of the transcription procedure.

5.2 Research design: qualitative research method

From the literature review, it soon became apparent that there was a paucity of information regarding consumers' perceptions and experiences in purchasing fresh food from retail outlets in Malaysia. In the absence of any empirical literature, given that the research problems identified were new to Malaysia and to the researcher, an initial qualitative research approach was considered to be the most appropriate means of addressing the research problems. Qualitative research is an unstructured exploratory research methodology which seeks to gain a qualitative understanding of the underlying reasons and motivations that most influence consumer decision making (Szwarc 2005; Malhotra et al. 2008). Daymon and Holloway (2002) consider a holistic focus to be one of the characteristics of a good qualitative research design. By having a holistic focus, qualitative researchers have the opportunity to gather a wide range of interconnected experiences, beliefs and values from respondents.

Small-scale studies are the norm in most qualitative studies as the main objective of the approach is for the participants to provide rich, detailed and holistic descriptions of the subject material being discussed (Daymon and Holloway 2002). Additionally, the need for the researcher to be actively involved in the data collection process was highlighted. The researcher is seen as the main 'research instrument' as he or she is engaged closely with the people being studied.

The two main benefits of conducting qualitative research is for; (1) the researcher to be able to hear the language consumers use to describe their experiences in dealing with the product; and (2) the researcher is able to identify a range of issues highlighted by consumers which may be considered important for the research (Szwarc 2005).

Malhotra et al. (2008) further classified qualitative research procedures on the basis of whether the objectives of the research were disclosed to the participants (direct approach) or disguised (indirect approach). In this study, participants were informed about the main purpose of the research study. A direct approach which involved focus groups and in-depth interviews was used to obtain the desired information.

In this preliminary study, focus group interviews provided the principal means of data collection. According to Sim (1998, p.346), a focus group is defined as a group interview – centred on a specific topic (focus) and facilitated and co-ordinated by a moderator or facilitator – which seeks to generate primarily qualitative data, by capitalising on the interaction that occurs within a group setting. Krueger and Casey (2000) claimed that a focus group is a special type of group in terms of purpose (listen and gather information), size, composition and procedures. Both researchers added that focus groups are seen as a method to better understand how people feel or think about an issue, product or services. Malhotra et al. (2008, p.119) defined focus groups as a group interview within a small group of participants, conducted by a trained moderator, in a non-structured and natural manner. Through a guided discussion, participants within a focus group discussion are allowed to interact with each other in a way that uncovers a range of insights on the topic of conversation (Szwarc 2005).

In comparison to in-depth interviews, focus groups allow participants to discuss, react to and to build upon the responses given by other group members. This method enables the researcher to identify subtle differences in responses and to ask follow-up questions immediately based on the responses given (Stewart et al. 2007). In addition, the type and range of data generated through the social interaction of the group are often deeper and richer compared to one-to-one interviews (Thomas et al. 1995).

According to McNeil (2005), in-depth interviews are a popular qualitative method in business-to-business research. In-depth interviews are normally used to get information from managers or from experts in a particular industry, whereas focus group interviews are an effective strategy in consumer research (Threlfall 1999). Given that in-depth interviews require more time, Kaar (2007) did not recommend this approach to researchers who face time constraints. Furthermore, given that in-depth interviews involve higher costs, this technique was considered inappropriate for this study.

To enhance the argument why focus groups were more appropriate for this study, Malhotra et al. (2008) suggested a few advantages of conducting focus group interviews as a data collection method. These included: (1) discussion in a group enables the researcher to gather more information compared to an individual interview; (2) bandwagon or synergistic effects often emerge where a participant's comment will trigger responses from other participants; (3) participants' responses are often spontaneous, which enhances the accuracy of their views; (4) more ideas emerge in a discussion rather than in an individual interview, and (5) focus group interviews are often flexible and more accommodating of the topics covered.

Stewart et al. (2007) mentioned that among the benefits of focus group interviews were: (1) the direct interaction between the researcher and participants, which provide opportunities for further clarification of responses, follow-up questions and for probing of responses; (2) the researcher is able to observe nonverbal responses and facial expressions which may support participants' responses; and (3) with the open response format, the researcher expects to obtain large and rich amounts of information in the participants' own words.

In the absence of any substantial body of literature on the factors influencing the consumers' choice of retail store in Malaysia, focus group interviews were considered to be the most useful and cost effective means of obtaining the data. Focus group interviews have been widely used in exploratory research and are a popular technique to gain a preliminary understanding of consumer preferences (Zeithaml 1988; Verbeke and Viaene 2000; Harper and Makatouni 2002).

Nevertheless, as highlighted by Thomas et al. (1995) and Rabiee (2004), the participants of a focus group cannot be considered as representative of a specific population. Thus, the findings arising from the discussions cannot be utilised in any statistical way nor can any inferences be made about the population from which they have been drawn (Szwarc 2005). As a result, the findings from this first phase of the study were considered to be preliminary and to precede a subsequent quantitative procedure.

5.3 Preliminary research objectives

The objectives of this preliminary research study were to identify:

1. the type of fresh food (fresh/chilled meat and fresh fruit and vegetables) that consumers most often purchased;
2. the criteria consumers used in their choice of retail store when purchasing fresh food;
3. differences in the perceived quality of fresh food between modern retail outlets and traditional markets;
4. consumers' preferences for self selecting and purchasing pre-packed fresh food; and
5. consumers' perspectives of fresh food quality and food safety in particular.

In addition, the preliminary study was also designed to seek answers on various sub-topics associated with the consumption of fresh/chilled meat and fresh fruit and vegetables including:

Topics on fresh/chilled meat	Topics on fresh fruit and vegetables
(a) How consumers cook [chicken/beef]? (b) Consumers' preference for different types of [chicken/beef] cuts. (c) The criteria consumers utilised in making their decision to purchase [chicken/beef]. Why the criteria are important in their decision to purchase [chicken/beef]? (d) The price consumers normally pay to purchase [chicken/beef].	(a) How consumers prepare [potatoes/spinach/apples]? (b) The criteria consumers utilised in their decision to purchase [potatoes/spinach/apples]. Why the criteria were important in their decision to purchase [potatoes/spinach/apples]? (c) The type of [potatoes/spinach/apples] most often purchased. (d) The price consumers normally pay to purchase [potatoes/spinach/apples].

5.4 Sample selection

Initially, participants were selected on the basis of convenience sampling. Convenience sampling is defined as a non-probability sampling technique that attempts to obtain a sample of convenient elements (Malhotra et al. 2008, p.272). Malhotra et al. (2008) confirmed that convenience samples were suitable for focus group interviews, pre-testing questionnaires or for the conduct of pilot studies.

Initially, the sample was drawn from the social network of the researcher (colleagues, friends, neighbours and relatives). After participating in the discussions, respondents were then asked to identify other potential participants who might be interested in joining the next group discussion. This approach is also known as the snowball sampling technique (Malhotra et al. 2008).

The benefits of both sampling techniques were that participants were easily reachable and it involved less time to gather them on each occasion. Nevertheless, convenience sampling has many potential sources of bias.

Although convenience sampling was utilised in this research, the researcher had to select and screen participants thoroughly. Rabiee (2004) emphasized that members of the same focus group should feel comfortable with each other, and as recommended by Krueger and Casey (2000), participants should share similar characteristics. The more homogeneous the membership of the focus group, the more confident individual group members are likely to be in voicing their views (Sim 1998). For instance, participants in the same focus group discussion should be of the same gender, age-range, ethnicity and social class (Bloor et al. 2002). According to McElroy et al. (1995), the rule for selecting focus group participants should be ‘commonality, not diversity’. Bloor et al. (2002) revealed how groups that are too heterogeneous often result in conflict.

To ensure that each individual gets along easily with other group members, trust and rapport must be established before embarking upon the group discussion (Krueger and Casey 2000). Trust amongst the members of the group will encourage the expression of views and opinions. This is a crucial factor, particularly when not

much information is available on the focal topic and the data from the focus group interviews are to be used to formulate and design a larger-scale study. In a study by Rabiee and Thompson (2000), all participants knew each other and felt comfortable talking about several personal issues and were able to express their views on how to widen participation. Kitzinger (1994) discussed the advantage of having acquaintances in the same group discussion so that they could relate to each other's comments. Nevertheless, researchers like Thomas et al. (1995) prefer newly-formed groups which consist of participants who do not know each other. Without prior social contact, participants were found to be more honest, spontaneous and to have a wider range of responses. The focus group discussions for this research were comprised of participants who brought along their friends and participants who were new to each other. At the beginning of every discussion, each participant was asked to introduce themselves to other group members. Participants were also grouped according to similar characteristics as suggested by Kitzinger (1994), McElroy et al. (1995), Sim (1998), Krueger and Casey (2000), Rabiee and Thompson (2000) and Rabiee (2004).

There is within the research community, considerable debate about the optimum number of participants in each focus group. Small groups, which consist of four to six participants, have been used by Strong et al. (1994). A group of between six to eight participants was suggested by Krueger and Casey (2000). Rabiee (2004) suggested that a group was manageable when there were between six and ten participants. A group of this size was described as being large enough to gain a variety of perspectives and yet small enough not to become disorderly. According to Malhotra et al. (2008), each group should be comprised of between eight and 12 members. Szwarc (2005) suggested that a focus group should gather from eight to ten people. Groups with less than eight participants are unlikely to generate the momentum for a successful group discussion and there is always the risk that one or two participants may withdraw at the last moment (Bloor et al. 2002). Groups which are too large can become difficult to moderate and some participants may not have the opportunity to express their views.

A total of four focus groups were organised between October and November, 2007, in Kuala Lumpur. Participants for the focus group discussions had to be the primary

food shopper for the household. With regard to the number of participants, nine participants were recruited for Focus Group 1 (FG1), 15 participants for FG2 and FG4, and only six participants for FG3.

According to the literature, the number of focus group interviews required is also subject to some debate. There is however, a general consensus that more than one focus group discussion should be conducted (Vaughn et al. 1996; Krueger and Casey 2000; Stewart et al. 2007). According to Szwarc (2005), if only two focus group interviews are conducted and the results differ, then it is necessary to conduct another discussion in the hope that the best two will provide the researcher with reliable information. Conducting more focus group discussions will tend to increase the reliability of the resulting data. However, Krueger and Casey (2000) and Daymon and Holloway (2002) suggest that the number of focus groups necessary may be only three or four. Ideally, the number of focus group discussions should continue until such time as a clear pattern of responses emerge and subsequent focus groups produce repetitious information. When a series of focus groups discussions are analysed simultaneously, the researcher will be able to determine a point at which there seems to be consensus on the range of issues raised by participants (Sim 1998). According to Krueger and Casey (2000), when no new issues are mentioned, saturation has occurred and no further groups need to be conducted.

In this research, the responses obtained from FG3 started to become repetitious. Nevertheless, the researcher undertook FG4 with the intention of obtaining responses from a mixed aged group. The majority of participants from FG1 and FG3 were mature age whereas the participants from FG2 were from a younger age group.

All focus group interviews were held in one of the seminar rooms at the Faculty of Economics and Business, National University of Malaysia (UKM), Bangi. The main reason to hold the discussions at a specially designed location was because the seminar room was equipped with recording facilities (audiocassettes). Furthermore, there was a need for the researcher to utilise the whiteboard within the seminar room. There were a few questions where the answers needed to be recorded on the

whiteboard to elicit further discussions from the participants. Even although the focus group interviews were held in a seminar room, the researcher ensured that the discussions were conducted informally and in a relaxed manner to encourage spontaneous comments from participants. Szwarc (2005) emphasised the importance of comfort to ensure participants felt relaxed and were at ease during the discussions. Refreshments were also provided for participants. As an appreciation for their time, participants received a cash payment of RM75 (AUD25) and a souvenir bag.

5.5 Interview format

Each focus group discussion followed an interview guide which consisted of a check list of questions on several sub-topics. The interviews were conducted by a moderator who facilitated the group discussions. According to Krueger and Casey (2000) and Szwarc (2005), a skilful moderator plays an important role in managing a group discussion. The moderator has the responsibility of managing existing relationships between participants, and to create an environment in which participants who do not know each other are encouraged to exchange views (Rabiee 2004). The moderator must also ensure that enough time is spent on each pre-determined topic, that no single participant dominates the group and each participant is given an opportunity to express their opinions (Szwarc 2005). Millward (1995) suggests that the role of a moderator is to learn from participants, rather than the reverse. Carey (1994) pointed out that a moderator should make sure that discussions happen between group members, rather than between participants and the moderator. Nevertheless, a moderator should not be so dominant in a discussion, as this may lead to bias (Goldman 1962).

In comparison to Westerners, Asian people are less open and have been conditioned to keep their opinions to themselves (Focus Groups in Asia n.d.). This presented one of the main challenges in conducting focus group interviews in Malaysia. As a result, the researcher selected a moderator, who was a lecturer of communication studies from the Islamic Science University of Malaysia (USIM), who was experienced in conducting focus group interviews and was very skilful at encouraging participation.

Although the interview guide was drafted in English, the focus group interviews were conducted in the Malay language. Malay language was used as a medium of communication because not all participants were competent in English. Participants are normally more comfortable communicating in the language that they best understand (Mokhlis 2006). However, several words and English terminology were sometimes used for those who were not fluent in Malay. Although there were a few Chinese and Indian participants in each group, they were comfortable expressing their views in Malay.

At the start of the interviews, the researcher introduced the research topic to participants, explained the objectives of the research, why participants had been chosen, and the expected duration of the discussion. According to Daymon and Holloway (2002), it is crucial for the participants to know that there are no correct answers or wrong answers in the discussion. The researcher is most interested in knowing what participants think and feel about the many issues raised in the discussion.

With the permission of the participants, each session was recorded for subsequent transcription and analysis. Tape recorders are invaluable for focus group interviews (Sim 1998; Lewis 2000). However, it is also recommended by Krueger and Casey (2000) that written notes be taken even when a tape recorder is used. According to Lewis (2000), notes are useable especially when the tape recorder stops while the discussion is still going on. The researcher acted as a co-moderator who took notes and took care of the audio equipment. When recording data, the researcher tried to capture the exact phrases and statements made by participants.

In the introduction phase, it was also important to inform the participants that all information gathered from the focus group interviews would be kept confidential. Participants were also informed that this research has obtained ethics approval from Curtin University of Technology.

Each focus group interview lasted approximately six hours – a 2.5 hour discussion on chicken and beef, a 1 hour break and a 2.5 hour discussion on fruit and vegetables. Although several researchers tend to argue that focus group interviews

typically last from two or three hours (Rabiee 2004; Szwarc 2005; Stewart et al. 2007; Malhotra et al. 2008), this period of time was necessary to establish rapport with participants in order to explore their beliefs, perceptions and ideas regarding two different topics that needed further investigation. At the time participants were recruited, each was advised of the likely time commitment.

5.6 Structured interview content

The next step was to develop a detailed list of questions for the focus group interviews that provided as an interview guide (Appendix 1 and Appendix 2). The interview guide contained a list of questions with several sub-topics on consumers' perceptions and experiences on food quality and the purchasing of fresh food that had been developed from the literature.

The interview guide was formulated following the guidelines provided by Lehmann (1985), Daymon and Holloway (2002) and Stewart et al. (2007). The questions were ordered from the more general to the more specific. To encourage rapport between participants and the moderator, Lehmann (1985) recommended that the interview guide begin initially with several simple descriptive questions. This approach creates an impression that the questions to be asked are easy and uncomplicated, which eventually stimulates a comfortable atmosphere for participants. This approach may also engender the immediate interest of participants (Lewis 2000). In this study, participants were first asked about the type of fresh food they purchased, followed by questions that explored their thoughts and attitudes toward the various products.

An interview guide contains mostly open-ended or unstructured questions. This allows participants to answer in their own words and from a variety of dimensions. Lewis (2000) suggested that questions should be carefully phrased to elicit maximum responses by participants. Stewart et al. (2007, p. 65) state that "questions that include words such as how, why, under what conditions, and similar probes suggest to respondents that the researcher is interested in complexity and facilitate discussion". There were also a few semi-structured questions. The information provided in the semi-structured questions was designed only as a guide

to enable the moderator to encourage discussion during those silent moments that may inevitably arise.

The interview guide in Appendix 1 was divided into seven sections. The interview guide consisted of topics regarding the consumption of fresh/chilled meat.

The target meats for this research were highly influenced by the ethnicity and cultural background of the Malaysian population. Malaysia is a multi-ethnic country which consists of Malay (50.4%), Chinese (23.7%), indigenous (11.0%), Indians (7.1%) and others (7.8%) (The World Factbook 2009). It was reported that 60.4% are Muslim, 19.2% are Buddhist, 9.1% are Christian and 6.3% are Hindu. Chicken was chosen due to the high consumption among Malaysian consumers and the acceptability by most religions (Paraguas 2006). According to the FAO (cited in Tey et al. 2008a) the consumption per capita of poultry was 33.8kg.

Beef was the other target meat for this research. Beef consumption among Malaysians is higher than mutton (Paraguas 2006; Tey et al. 2008a). In 2003, the per capita consumption of mutton was low – only 0.5kg whereas the consumption of beef was 5.8kg (Tey et al. 2008a). While the consumption of pork is high among the Chinese (Paraguas 2006), as the majority of Malaysians are Muslim and the consumption of pork is forbidden, pork was not selected for this research.

Section One: Introduction to the focus group interview

The session began by introducing the researcher and the moderator to participants, followed by the objectives of the research, the purpose of the discussion, obtaining participants' consent to record the discussion, an assurance of the confidentiality of the discussion, and the duration of the discussion.

Participants were then given the opportunity to introduce themselves. Besides breaking the ice, Stewart et al. (2007) mentioned that this establishes rapport within the group when a member introduces himself or herself to the other members of the group.

Section Two: Store choice behaviour

The first question in this section was designed to investigate the place where participants purchased fresh/chilled meat (Becker et al. 2000; Bonne and Verbeke 2006). Participants were also required to indicate the percentage of fresh/chilled meat that was purchased from other outlets and to justify the reasons for purchasing from their preferred retail store (Hsu and Chang 2002).

Section Three: Quality of fresh/chilled meat

Participants were required to indicate how they assessed the quality of fresh/chilled meat and to identify any differences in the quality of fresh/chilled meat between modern retail outlets and the traditional market (Becker 2000). Participants were also required to discuss their preferences for self-selecting or purchasing pre-packed meat. The researcher found that it was important to ensure that the discussion was about quality and did not revolve around price only, as quality could be related to other criteria (Batt 2004).

Section Four and Section Five: The purchase of chicken and beef

Section Four and Section Five contained similar questions. Section Four involved participants' purchase of chicken, while Section Five was about the purchase of beef. The questions revolved around the frequency of purchasing [chicken/beef] in the household, the methods of preparation and cooking, followed by their preferences for purchasing different cuts of [chicken/beef]. These questions were derived from Glitsch (2000), Hsu and Chang (2002) and Goldman and Hino (2005).

The researcher was keen to identify the attributes that most influenced the participants' decision to purchase [chicken/beef]. The literature was used to guide how participants ranked the importance of the attributes of [chicken/beef] with desired values (Hoffman 2000; McEachern and Schroder 2002).

Several photographs of [chicken/beef], taken from various retail outlets, were shown to participants in order to investigate whether they would purchase the [chicken/beef] from the photographs shown. Daymon and Holloway (2002) confirmed that showing photographs that were related to the topic helped to stimulate discussion. The final question in this section required participants to recall

the price they normally paid to purchase [chicken/beef] from their preferred retail outlet.

Section Six: Dissatisfaction with the meat purchased

Participants were asked some general questions about their dissatisfaction with the quality of the [chicken/beef] that they had purchased. An additional question was included to investigate how participants reacted when they were disappointed with their purchase of [chicken/beef].

Section Seven: Food safety issues

Questions in this section were designed to explore participants' level of confidence with the Malaysian food system to manage matters such as Halal, organically produced food, genetically modified food, bacterial contamination and hygiene, animal diseases, hormones, antibiotics and chemicals. In addition, participants were asked about whether they had ever boycotted any particular food product, and to explore the reasons for their action.

Upon completing the first round of the discussion, participants took a one hour break for lunch. After lunch, the second round of the discussion revolved around the purchase and consumption of fresh fruit and vegetables (Appendix 2). Here, the interview guide was divided into eight sections.

Section One: Store choice behaviour

This section began with a question which sought to identify which fresh fruit and vegetables were most often purchased by the participants. There were two main reasons why this question was important. Firstly, not a great deal of research on the consumption of fresh fruit and vegetables among Malaysian consumers has been published. Secondly, since this phase of the research was exploratory, it was crucial to identify which fruit and vegetables were most often purchased by Malaysians.

Other questions revolved around participants' preferred place to purchase fresh fruit and vegetables, the percentage of fresh fruit and vegetables purchased from different types of retail outlets and the motives behind their decision to purchase

from their preferred retail outlet. This group of questions were derived from Zikhan et al. (1999) and Yoo et al. (2006).

Section Two: The quality of fresh fruit and vegetables

The questions in this section were designed to explore the criteria participants' used in evaluating the quality of fresh fruit and vegetables in a retail store (Berdegue et al. 2005). In addition, participants were also asked about their preferences to self select the fresh fruit and vegetables they purchased or to select pre-packs and the reasons for their choice.

Section Three, Four and Five: The purchase of fresh potatoes, spinach and apples

The Food and Agriculture Organisation of the United Nations (FAO) have classified a variety of food crops produced around the world. Among the types of crops identified were cereals, leafy or stem vegetables, fruit-bearing vegetables, citrus, oilseed crops, beverage crops and others (Classification of crops n.d.). Similarly, the Malaysian Department of Agriculture (DOA) has categorised over 50 types of vegetables (leafy, fruit, root and others), or groups of commodities under cash crops (maize, groundnuts, cassava, yam and sweet potatoes) and spices (hot chilli, ginger and lemon grass) (Chong 2007). According to Tey et al. (2008c), with modern retail outlets expanding in urban and rural areas in Malaysia, consumers have more choice as to which fresh fruit and vegetables they wish to consume. In order to analyse a wide range of issues such as the usage of pesticides and fertilisers, the importance of country-of-origin labelling, organic and conventionally grown crops, participants were asked to respond to a number of questions about potatoes (a root/tuber crop), spinach (a leafy or stem vegetable) and apple (a pome fruit).

In all three sections, similar questions were asked of the participants. The first question required participants to discuss the methods of preparation most widely used in the household for potatoes, spinach and apples. Next, participants were required to indicate which attributes they most often used in their decision to purchase [potatoes/spinach/apples] (Baker et al. 1999). Participants were also

required to indicate why these attributes were important in their decision to purchase.

In order to encourage more discussion, several photographs of the three crops taken from both modern and traditional retail outlets were shown to participants. Further discussion revolved around participants' comments towards the photos, whether they would purchase the product and the motives or reasons for their selection. They were also asked to indicate what price they would be willing to pay to purchase the fresh produce illustrated.

Section Six: Dissatisfaction with the fresh fruit and vegetables purchased

This group of questions explored the actions taken by participants when they were dissatisfied with the quality of the fresh fruit and vegetables they had purchased.

Section Seven: Food safety issues

Section Seven consisted of a number of questions relating to food safety issues in Malaysia. Participants were asked to justify the level of confidence they had in the Malaysian food system in terms of managing organically produced food, genetically modified fruit and vegetables, and chemical residues in plants/plant products.

Section Eight: Socio-demographic questions

At the conclusion of the discussion, participants were asked to complete a brief survey form which included several socio-demographic questions.

This contained questions on the age, gender, marital status, level of education, occupation, and ethnicity of the participants. Participants were required to indicate the number of people living in their household. They were also required to declare the town or suburb where they live, their average monthly income and comments regarding the focus group interviews. As most researchers have reported a correlation between demographic variables and the purchase of fresh/chilled meat (Kubberod et al. 2002; Sasaki and Mitsumoto 2004; de Carlos et al. 2005; Verbeke and Vackier 2004) and the purchase of fresh fruits and vegetables (Polard et al. 2002; Pearson 2005), this information was of considerable value.

5.7 Transcription procedure

Focus group interviews ordinarily generate a large amount of data (Rabiee 2004). Krueger and Casey (2000) suggested that the information collected from a focus group discussion should immediately be transcribed and analysed. According to Daymon and Holloway (2002), it is easier to structure information while the details are still fresh in the researcher's mind.

The first step was to transcribe the entire interview. Although the process is quite tedious and time consuming, it was suggested that transcribing the interview is desirable, for it provides a complete record of the discussions which will facilitate the subsequent analysis of the data (Lewis 2000). Without transcribing the interview, the data is at risk of being exposed to the selectiveness of the researcher which may lead to losing much of the richness inherent within the data (Bloor et al. 2002). The researcher found that it was necessary to transcribe the interview in order to conduct a more detailed and rigorous analysis.

The next step is followed by familiarisation with the data (Rabiee 2004). Bloor et al. (2002) suggested that the researcher should listen to the tapes while reading the completed transcript several times in order to familiarise themselves with the data and to check for quality and completeness. At this time, the notes taken by the moderator and the researcher were compared. The aim of this analysis was to identify emerging themes, trends and patterns that may reappear within the discussions.

The data was then encoded in order to make the data more manageable for interpretation. The purpose of coding was to identify and constantly compare similarities and differences in order to formulate categories of interest (Bloor et al. 2002). The coding process was done by making notes in the margins about themes or key issues which emerged from the discussion.

In the next step, the data was organised into several categories. This required the researcher to compact the data and to relate it back to the research objectives. Daymon and Holloway (2002) suggest that the researcher look deductively for

relationships or associations within the data. Patterns in the data were developed from the relationships identified and then related back to the literature.

The data was most effectively managed by developing a long table using Microsoft Word for each question discussed. As suggested by Krueger and Casey (2000), the use of a long table facilitates the content analysis by comparing the words used to answer each question by each group. A frequency column was placed at the end of the table to count how many times a phrase was mentioned in each discussion. The use of this approach is to make an inventory of the points discussed (Bertrand et al. 1992). This method has several advantages. Firstly, this system reduces the vast quantity of information into a more manageable form. Secondly, this system is useful when comparing data from different groups with different socio-demographic backgrounds.

The transcription process for all four focus group discussions was completed within eight weeks. The analysis of the preliminary data is presented in the next chapter.

6. Preliminary research findings[2]

6.1 Chapter Outline

This chapter will discuss the preliminary research findings drawn from the four focus group discussions. The first part of this chapter will describe the socio-demographic characteristics of the participants, followed by the findings from the discussions on fresh/chilled meat and the discussions on fresh fruit and vegetables. The chapter concludes with several implications to address the issues identified.

6.2 Demographics

Participants for the focus group discussions were the primary food shoppers for the household. A total of 45 participants joined the discussions; 9 in Focus Group 1 (FG1), 15 in both FG2 and FG4, and 6 in FG3 (Table 6.1).

As the majority of food shopping is usually done by women, the majority of participants were female. Only one male participant joined the discussion.

In terms of age, participants were spread across all age groups. However, there were more older participants in FG1 (45 to 64 years old) and FG3 (35 to 64 years old), while the younger participants were represented in FG2 (18 to 34 years old). Participants in FG4 were a combination of young and older age groups (18 to 54 years old).

Most of the participants (35) were married.

[2] The following chapter was developed from Chamhuri, N. and Batt, P.J. (2009), Factors Influencing Consumers' Choice of Retail Stores for Fresh Meat in Malaysia, *19th Annual World Food and Agribusiness Forum and Symposium*, 20-23rd June 2009, Budapest, Hungary and from Chamhuri, N. and Batt, P.J. (2009), Consumer Choice of Retail Outlet: Focus Group Interviews in Malaysia, *XVIth International Symposium on Horticultural Economics and Management,* 28th June-2nd July 2009, Chiang Mai, Thailand.

Table 6.1: Profile of focus groups

	FG1	FG2	FG3	FG4
No. of participants	9	15	6	15
Gender	Female (9)	Female (15)	Female (6)	Female (14) Male (1)
Age	45-55 yrs (5) 55-64 yrs (4)	18-25 yrs (4) 26-34 yrs (11)	35-44 yrs (4) 45-55 yrs (1) 55-64 yrs (1)	18-25 yrs (1) 26-34 yrs (10) 35-44 yrs (3) 45-54 yrs (1)
Marital status	Married (8) Others (1)	Single (2) Married (13)	Married (6)	Single (2) Married (8)
Education level	PMR (1) SPM (4) STPM (4)	STPM (3) Degree (10) Post grad (2)	PMR (1) SPM (2) STPM (2) Degree (1)	STPM (2) Degree (10) Post grad (3)
Occupation	Work out (1) Housewife (5) Self-employed (1) Others (2)	Work out (14) Housewife (1)	Housewife (4) Others (2)	Student (1) Work out (13) Housewife (1)
Race	Malay (8) Chinese (1)	Malay (12) Chinese (1) Indian (1) Others (1)	Malay (4) Chinese (1) Indian (1)	Malay (11) Chinese (2) Indian (1) Others (1)

Almost half of the participants held an undergraduate degree (21), while 19 participants had obtained at least some secondary education. The remaining 5 participants had earned a postgraduate degree.

More than half of the participants (28) worked either in the private or government sector, although 14 of the participants were housewives. The remaining participants were either self-employed, students or retired.

As the largest ethnic group in the country, Malays comprised the majority of participants in each group. Five participants were Chinese, 3 were Indian and 2 participants represented ethnic groups from Sabah and Sarawak. Since Malaysia is a multi-cultural country, the researcher purposely recruited a few Chinese and Indians in each group as it was important to capture the different views they possessed on food quality, Halal and other food safety issues. Even the way they consume and prepare chicken and beef is not the same as the Malays, if they eat meat at all.

6.3 Results from the fresh/chilled meat discussion

In general, participants from each focus group purchased beef and chicken from both modern retail outlets and traditional markets. However, the majority of respondents preferred to buy beef and chicken from traditional markets. Freshness and the guarantee of Halal were mentioned by all four groups when participants were asked why they selected traditional markets over modern retail outlets. Nevertheless, there were a small number of participants who chose to buy fresh meat occasionally from modern retail outlets.

A number of factors were mentioned during the focus group interviews which were then integrated under similar themes. A total of eight themes were identified as the major factors which most influenced the consumers' decision to purchase fresh meat from modern retail outlets or traditional markets (Table 6.2).

Table 6.2: Factors attracting consumers to purchase fresh/chilled meat from modern retail outlets and traditional markets

Factors attracting consumers	Modern retail outlets	Traditional markets
Freshness	√	√
Halal guaranteed		√
Good relationship with retailers		√
Good quality		√
Competitive price	√	√
Convenience	√	√
Varieties	√	√
Good environment	√	

√ : represent responses mentioned from focus group discussions

The factors are not ranked according to importance as the purpose of this study was to identify the variables that were most often used by Malaysian consumers in their decision to purchase fresh meat from a retail store.

6.3.1 Freshness

Freshness was often cited as one of the most influential variables impacting on the consumers' decision to purchase fresh meat. In this study, freshness was a factor which attracted consumers to shop at both outlets. The findings of this study are similar to earlier research which indicated that consumers consider freshness

(Munoz 1998; Verbeke and Viane 1999), alongside factors such as the reputation of the place of purchase (Cowan et al. 1999; Hsu and Chang 2002).

According to Kennedy et al. (2004), in order to judge freshness, product appearance (which comprises colour and the physical form of the meat) were utilised. How the product looked was important to judge the freshness of the meat, especially when meat was pre-packaged in retail outlets (Warriss 2000).

At the time of purchase, consumers must rely entirely on visual cues. For instance, in determining the freshness of beef, the meat was expected to have a bright red colour. As one respondent commented:

> 'Colour indicates the freshness of the beef. Red implies that the beef is still new and the cow has just been slaughtered.'

In Malaysia, consumers prefer shopping at traditional markets for fresh meat. They emphasized the freshness of meat in traditional markets, given that fresh meat products were slaughtered early in the morning at slaughterhouses and delivered directly to retailers in various locations. The situation in the traditional markets in Malaysia is similar to Taiwan, where fresh meat is displayed on counters or hung on hooks (Hsu and Chang 2002). Consumers are allowed to touch the meat before deciding which cuts to buy.

The main reason why consumers seek freshness when purchasing meat is associated with food preparation. The majority of elderly participants from FG1 and FG4 indicated that freshness was an important element in the preparation of meals at home. If the products bought were not fresh, the meal would not be tasty or healthy. A participant from FG4 commented that:

> 'Freshness will affect the taste of your food. If the beef is fresh, you can taste the 'sweetness' of the beef in your cooking.'

This finding corresponds to other studies by Zinkhan et al. (1999) and Goldman and Hino (2005). It is important to purchase fresh food to maintain good health and to enjoy the taste of the food. Therefore, fresh food like beef, fish, poultry and fruit are purchased at traditional markets for these are where the requirements for freshness

can best be met (Zinkhan et al. 1999). Goldman and Hino (2005) added that when consumers emphasised the use of fresh products in their food preparation, they were less likely to buy fresh produce from supermarkets.

However, modern retail outlets have the advantage of offering fresh meat in refrigerated display units. Fresh meat in modern retail outlets is pre-cut and pre-packaged in sanitised conditions, then chilled and displayed on temperature controlled shelves (Hsu and Chang 2002). Younger participants from FG2 occasionally purchased beef and chicken from supermarkets as they were attracted to the clean, chilled and nicely packed meat. Furthermore, supermarkets and hypermarkets have the advantage of good retail procurement logistics, technology and inventory management (Reardon et al. 2003). In contrast, the food safety issue in traditional markets is questionable, as the majority of retailers do not have the proper storage space, refrigeration and the knowledge to prevent fresh meat from becoming contaminated.

6.3.2 Halal guaranteed

In Malaysia, the majority of consumers are Muslims. Muslims have to follow a set of dietary laws intended to advance their well being (Bonne and Verbeke 2006). Under these special dietary laws, Muslims are prohibited from the consumption of alcohol, pork, blood and dead meat. They are only allowed to consume Halal meat. Halal is an Arabic word which means permitted, allowed or lawful. When the word Halal is used in relation to food, it means permissible for consumption by Muslims. Beef, chicken or lamb has to be slaughtered according to Islamic rules to guarantee the Halal status of the product.

Several issues on Halal food production in Malaysia have raised concerns among Muslim consumers. For example, chicken meat and pork meat have been found stored together in some supermarkets. Sausages containing non-Halal ingredients have been discovered and several food companies have recently been caught using expired Halal certificates or fake Halal logos (Che Man and Selamat 2005; Zakaria 2008).

When participants were asked what they look for in their decision to purchase beef and chicken, the majority of respondents in all four focus groups indicated the importance of Halal. This finding was similar to Shafie and Othman (2006) who reported that 89.0% of consumers highlighted the importance of Halal in their decision to purchase meat.

The issue of Halal and the relationship between butchers and customers is very close. The basis of this argument is that consumers place considerable value on being served by butchers of the same ethnic race and religion in the traditional market (Goldman and Hino 2005; Bonne and Verbeke 2006). According to one participant:

> 'The question of Halal and where I buy my meat supplies from is important to me and my family. This is why I buy from the same butcher at the same fresh market every time I want to buy beef. I am confident of the source – where the seller gets the beef from'.

The introduction of an Halal logo by the Malaysian Department of Islamic Development (JAKIM) has provided a formal means of quality assurance for Muslim consumers. JAKIM is responsible for verifying and certifying every item which includes food for Halal compliance. Beef and chicken which is slaughtered in Malaysia and available from modern retail outlets carries a Halal logo from JAKIM, while imported beef from Australia carries a 'Fresh Halal Aussie Beef' logo. The Halal logo attached to pre-packs of beef and chicken may provide a significant advantage compared to vendors from traditional markets that do not have Halal certification.

However, this factor alone does not encourage most consumers to buy fresh meat from modern retail outlets. Consumers, especially the elderly, are less likely to buy meat from supermarkets or hypermarkets because they lack confidence (Bonne and Verbeke 2006). The majority of elderly participants from FG1 and FG3 still prefer to buy meat from their preferred butcher. A participant from FG1 commented that:

> 'I will try my very best to avoid buying imported beef as I am not confident with the Halal status of the meat. I wonder why imported beef does not carry Halal-JAKIM labels?'

Another respondent from FG3 added:

> 'I still have doubt with the Halal system in our country. This is why I do not buy my fresh meat from supermarkets. I only buy my beef and chicken from Muslim butchers'.

According to Shafie and Othman (2006), food products with Halal logos have more meaning to consumers than other certificates of assurance. Nevertheless, the institutionalised quality assurance of an Halal logo has only managed to capture younger consumers rather than the majority of consumers. Younger shoppers are more confident with the Halal logo displayed on the packages of beef and chicken sold in modern retail outlets. Furthermore, they are strongly in favour of the Halal label and the slaughtering method for the reason of convenience shopping (Bonne and Verbeke 2006). In this study, younger participants from FG2 and FG4 sometimes buy their fresh meat supplies from supermarkets and hypermarkets, especially on their way home from work. Bernues et al. (2003) agree with this argument and confirm that younger consumers were more likely to use product labels as a source of information.

6.3.3 Good relationship with retailers

Traditional markets constitute a place not only to purchase perishable goods, but also provide a place for meeting acquaintances. Relationships are built not only between vendors and customers, but also between buyers. For example, buyers exchange information about the quality of the products available or which stalls offer the best bargains. Traditional markets are perceived as a place to foster social relationships (Zinkhan et al. 1999).

Personal relationships built between retailers and consumers developed trust for both groups. Zinkhan et al. (1999) stated that the respondents who often visit the street market in Sao Paulo know each other by name and often engage in social conversation. Goldman and Hino (2005) reported a similar result as Arab Israelis prefer to buy fresh meat from a known and trusted source. This ensures customer loyalty as consumers continue to purchase from the same retailer. In this study,

several respondents from FG2 and FG3 made similar statements about the importance of developing a good relationship with retailers:

> 'I only buy chicken from Muslim butchers. This is to ensure that the chicken is being slaughtered according to the Islamic way. I believe that Muslim vendors practice the right way of slaughtering the chicken'.

> 'I recognise very well the vendor. This is why I buy my beef supplies from her'.

Abu (2004) agrees with the importance of personal interaction between vendors and customers which eventually develops customer loyalty. Customers are more loyal to a store which offers warm and friendly service. Vendors in traditional markets often give feedback to customers who are looking for quality products. Factors such as the ability to truthfully answer customers' questions, giving regular customers individual attention and vendors' knowledge of their product attracts customers to shop from a particular retail outlet (Dabholkar et al. 1996). The social environment in traditional markets provides a leisurely experience for consumers which cannot be experienced when shopping at supermarkets or hypermarkets. Furthermore, there are no channels for immediate feedback for customers who shop from modern retail outlets.

It is difficult for small retailers to compete in the market with large and powerful retailers such as supermarkets and hypermarkets. Klemz and Boshoff (2001) suggested that small retailers should compete by improving their service rather than competing on price. Vendors in traditional markets are able to offer numerous services to their consumers compared to modern retail outlets. In Taiwan, for example, a few chickens are kept alive behind counters and slaughtered for customers with special requests (Hsu and Chang 2002). Other services such as chopping, slicing, skinning, de-boning, grinding and packing are also provided by butchers in traditional markets.

6.3.4 Good quality

With increasing income, consumers are becoming more demanding of food quality. According to Sloan et al. (1984) and Steenkamp and Van Trijp (1989), consumers are willing to pay more to purchase the quality food they demand. With more consumers having higher education and being more practical, Farhangmehr et al.

(2000) highlighted the importance of quality, followed by price when purchasing food. Previously, consumers were more concerned about low prices. Currently, consumers have shifted their focus towards quality and gaining better value for money. McEachern and Schroder (2002) confirm that quality and taste were cited as the most important criteria in selecting fresh meat in Scotland.

The majority of participants from all focus groups recognised that there was a difference in the quality of the fresh meat between both retail outlets. Most stated that the fresh meat available from traditional markets was of higher quality compared to that available from supermarkets and hypermarkets. Zinkhan et al. (1999) reported that 88.0% of survey respondents suggested that the quality and freshness of fresh produce was the most important reason why they shopped at traditional markets. Several consumers purchased meat solely from their preferred butcher, as they perceived it to be better quality than the meat sold at supermarkets (McEachern and Schroder 2002).

However, quality means many different things to different people. For Arab Israelis, meat is of high quality when it is freshly killed, still 'warm' and not chilled or frozen (Goldman and Hino 2005). According to Zinkhan et al. (1999), Brazilian consumers determine the quality of fresh meat by touching or smelling the product. These characteristic of quality are better fulfilled in traditional markets, which leads consumers to buy their fresh meat there.

6.3.5 Competitive price

Competitive price was mentioned as a reason for consumers to buy their fresh meat from both outlets. In marketing, price is a powerful and convincing tool to attract consumers to purchase from a particular retail outlet. According to Pride et al. (2004), price is a tool which informs consumers about the value of the product. Value ultimately brings satisfaction to the consumer.

Generally, retail outlets which offer good quality products at a lower price will attract more consumers. According to Trappey and Lai (1997), offering lower prices is an important reason for consumers to shop at supermarkets. The fact that the

price in traditional markets is higher motivates consumers to buy goods from hypermarkets or supermarkets (Farhangmehr et al. 2000). Modern retail outlets are capable of offering more competitive prices for the products they stock as they have the economies of scale in procurement. Furthermore, competition between the major chains is forcing prices down. In Malaysia, Giant, Tesco and Carrefour have engaged in a price war to entice consumers to purchase from their stores. Carrefour has cut prices for about 1,200 products and Giant is reported to have sacrificed profits in order to maintain their low-price leader position in the country (Arshad et al. 2006). While price-wars may be advantageous for consumers, it does put pressure on local retailers to provide a similar price.

However, prices of fresh meat in the traditional market are not always cheaper than modern retail outlets (Farhangmehr et al. 2000; Hsu and Chang 2002). Hsu and Chang (2002) recorded the unit prices of various meat cuts from both retail outlets in Taiwan. Based on the data collected, several fresh meat products in traditional markets were sold at a higher price compared to supermarkets. For example, retailers in the traditional markets in Taiwan sold a whole chicken for $5.80/kg compared to $2.90/kg from supermarkets.

Nevertheless, participants who shop in the traditional markets enjoy competitive prices, for they are allowed to bargain, whereas the price in modern retail outlets is fixed. Participants mentioned that they felt satisfied with their purchases from traditional markets after gaining the product through negotiation with vendors. This cannot be experienced when shopping from modern retail outlets. Zinkhan et al. (1999) argued that the prices of fresh produce in traditional markets tended to be higher only at certain times like early morning. In order to receive further discounts or price reductions, consumers were encouraged to visit traditional markets later in the afternoon. Nevertheless, the trade-off when shopping later is not getting the best quality products.

6.3.6 Convenience

Convenience was mentioned as one of the factors attracting consumers to shop from both outlets. Convenience was seen from the shoppers' perspective as selecting

their preferred shopping outlet based on the hours of operation and travel time (Kaufman 1996). According to Pride et al. (2004), convenience not only saves time, but also reduces stress, cost and other expenditure. Basically, convenience eases consumer discomfort.

Convenience also has different meanings, depending on which retail outlet was chosen and to which age group the respondent belonged. The concept of convenience and location is very much related. Retail location theory states that consumers prefer to shop as close to home as possible (Kaufman 1996). According to Bell et al. (1998), the location of retail outlets indicates where consumers are most likely to purchase their food. Their argument is that consumers are more likely to visit the retail store which brings the lowest total shopping cost. Mui et al. (2003) reported a significant correlation between the place of residence and the retail store that shoppers patronise. In Malaysia, 45.0% of respondents stated that they were willing to spend no more than 15 minutes to travel to a retail outlet. Shoppers prefer to shop at retail outlets which are close to their home or place of work.

In this study, participants who shopped in the traditional markets described convenience as those markets which were close to where they live. Older participants from FG1, FG3 and FG4 mentioned that they had been visiting the same local markets which were perceived to be more convenient for them. Since traditional markets seldom provide any parking place, shoppers who live nearby simply walk to the market. According to Trappey and Lai (1997), traditional markets have an older population of consumers who live nearby and are familiar with and loyal to local vendors. Goldman and Hino (2005) suggest that if the travel distance to supermarkets is greater, then the probability of shopping at traditional markets is higher.

When shopping from a modern retail outlet, convenience means anything that saves or simplifies work and brings comfort to consumers. According to Trappey and Lai (1997), younger consumers who are more occupied with work and family prefer to shop in modern retail outlets for these better satisfy the needs of a faster-paced lifestyle. Convenience for them meant that the store provided facilities such as car parking, trolleys and baskets, proximity to other shops, extended trading hours, a

low level of in-store crowding, good presentation of products, signage, and the desired width and depth of the product range (Geuens et al. 2003). Shoppers who purchase from modern retail outlets do not always live near the supermarkets. Convenience for them meant one-stop shopping.

According to Farhangmehr et al. (2000), convenience makes consumers more practical. Since most goods are available from modern retail outlets, it is more practical to buy everything at the same time from the same place. Besides buying daily necessities, Malaysian consumers were reported to accomplish other activities such as relaxing and dining with family and friends, watching movies, bowling, visiting the hair salon and banking in modern retail premises (Mui et al. 2003). Similar findings were reported by Goldman and Hino (2005). Convenience motivates Arab Israelis to shop at large supermarkets as it is perceived as a family event where all family members participate.

6.3.7 Variety

In the traditional markets, variety means more choice. There are various stalls that sell fresh meat and chicken, fruit and vegetables, fish, traditional cakes and several other ready-to-eat food items. Traditional markets were viewed as 'fresh food supermarkets', providing one-stop shopping for a large variety of fresh foods (Goldman et al. 1999). Zinkhan et al. (1999) reported that the majority of respondents in Sao Paulo shopped for fresh products at traditional markets because of the variety of products available. Vendors in traditional markets are regarded as product specialists, for they provide a deep selection of products from a narrow range of items. If a stall is charging too much, consumers will often visit another stall as there are plenty of alternatives to choose from.

Where consumers decide to shop is also related to the product category. When it comes to beef, consumers can choose whether to buy local beef or imported beef. In this study, the older participants from FG1 and FG3 preferred to visit the traditional markets to buy local beef. Most older participants from both groups seldom buy imported beef. As a result from this, they hardly ever visit supermarkets or hypermarkets. In contrast, the younger participants from FG2 shop at modern retail

outlets to purchase different cuts of beef and chicken. For example, one participant claimed she goes to supermarkets to buy minced chicken and beef steaks which are not available from the traditional market. According to Shamsudin and Selamat (2005), most respondents in Malaysia prefer to purchase fresh produce from supermarkets (41.0%) and hypermarkets (28.0%). The main reason is that modern retail outlets have a greater variety of fresh food which is always available. Conversely, the limited range of products offered by the traditional market is one reason why some consumers prefer to shop at modern retail outlets.

Modern retail outlets are capable of offering a wide variety of food and non-food items. When consumers buy their fresh meat, they can also buy fruit and vegetables, dairy, canned or packed goods, household cleaning products and other non-food items at the same time. Farhangmehr et al. (2000) confirmed that Portuguese consumers preferred to shop at modern retail outlets because of the possibility of buying everything under one roof. When asked why they shop at shopping malls, the majority of respondents in Malaysia cited the variety of shops and products as the main criteria for shopping at modern retail outlets (Mui et al. 2003). Supermarkets and hypermarkets were the preferred place for shopping in general.

6.3.8 Good environment

Store environment and layout may influence the consumer's choice of retail store (Baker 1990). The concept of store image is the way consumers 'see' the store in their minds (Farhangmehr et al. 2000). According to Yalch and Spangenberg (1990), the right use of colour, lighting, sound and furnishings may stimulate perceptual and emotional responses within consumers, which eventually affect their behaviour. Espinoza et al. (2004) state that a good store atmosphere and pleasant surroundings may increase the consumers' willingness to buy.

Modern retail outlets offer a good environment for shoppers. These modern retail outlets are described as clean and comfortable; the store is air-conditioned; it's easier to buy goods with the trolley provided; and modern retail formats are a suitable place to shop and to bring the children. Although the prices of certain items may be relatively higher than traditional markets, consumers still shop at modern

retail outlets due to comfort and good parking facilities (Abu 2004). The good environment provided by most modern retail outlets is used as a marketing tool to attract more customers.

Conversely, participants described traditional markets as crowded and the market was hot and stuffy. This was not dissimilar to how consumers in Hong Kong described traditional markets: dirty, slippery, crowded, smelly, unorganised and noisy (Goldman et al. 1999). According to Hsu and Chang (2002), the floor in most traditional markets in Taiwan is wet and dirty. Furthermore, fresh meat products may be easily contaminated as the butchers do not wash their hands between handling fresh meat and doing other tasks. In Indonesia, many consumers complain about the dirty condition of wet markets and are often robbed by pickpockets (Muharam 2001).

6.4 Results from the fresh fruit and vegetables discussion

Similar to the previous discussion on fresh/chilled meat, the majority of respondents preferred to buy fresh fruit and vegetables from traditional markets. Freshness was mentioned by all four groups when participants were asked why they selected traditional markets over modern retail outlets. However, there were a small number of participants who chose to buy fresh fruit and vegetables occasionally from modern retail outlets.

The factors which most influenced consumers in their decision to buy fresh fruit and vegetables from the two different outlets are summarised in Table 6.3.

Table 6.3: Factors attracting consumers to purchase fresh fruits and vegetables supplies from modern retail outlets and traditional markets

Factors attracting consumers	Modern retail outlets	Traditional markets
Competitive price	√	√
Convenience	√	√
Varieties	√	√
Freshness	√	√
Sales promotions	√	
Good environment	√	

√ : represent responses mentioned from focus group discussions

Similar to the analysis of the findings from the fresh/chilled meat discussion, the factors are not ranked according to importance as the purpose of this study was to identify the variables that were most often used by Malaysian consumers in their decision to purchase fresh food. A total of six themes were identified as the major factors which most influence the consumers' decision to purchase fresh fruit and vegetables from a retail outlet.

6.4.1 Competitive price

Similar to the fresh/chilled meat discussion, competitive price was mentioned as a reason for consumers to buy their fresh fruit and vegetables from both outlets. Most participants from focus groups FG2, FG3 and FG4 believed that modern retail outlets sold fresh fruit and vegetables at a much cheaper price compared to traditional retail outlets, particularly in the form of pre-packs. A participant from FG2 commented that:

> 'Although I prefer to self-select my fruit and vegetables, pre-packs are normally sold cheaper'.

Another respondent from FG3 added:

> 'The cheaper price offered by supermarkets are only to attract customers to buy pre-packed fruit and vegetables'.

At the same time, another respondent from FG4 stated that:

> 'I always compare the prices of pre-packed and loose potatoes. If the price of pre-packs is too low, then I make the assumption that the potatoes are of lower quality.

Pearson (2005) argued that consumers often associate lower prices with a perception that the product is of low quality. Therefore, it is debateable whether a low price alone is a valid approach to attract more buyers to a particular retail outlet. However, local seasonal fruits like durians, mangosteen and rambutans, as well as imported produce such as potatoes from the US or apples from Australia, were found to be more expensive at supermarkets and hypermarkets.

There were also some participants who thought that the fresh produce available from traditional markets was cheaper. This very much depended on which of the traditional markets shoppers most frequently visited. For instance, a participant from FG3 indicated that fresh fruit and vegetables from farmers markets are more expensive compared to other traditional markets. Another participant from the same group discussion agreed and mentioned that fresh produce sold at wholesale markets was much cheaper than other markets.

6.4.2 Convenience

Another factor which was perceived to influence participants store choice behaviour was convenience. The findings revealed that there were differences in the concept of convenience between the older and younger participants of the focus group discussions. An elderly participant from FG1 commented:

> 'Although the trading hours in traditional markets is not too convenient as it opens from morning till afternoon, location wise it is convenient as the markets are situated near my house'.

Another participant from the same focus group added:

> 'I agree. It is also convenient for me to walk to the mini-market. As I buy fish, I also buy my fruit and vegetables supplies'.

However, those participants who do not reside close to any traditional markets or grocery stores do not find it convenient to shop at these places. One young participant from FG4 commented:

> 'I dislike going to traditional markets. No parking place is provided, which makes it difficult and time consuming to find a parking space'.

Torjusen et al. (2001), Hsu and Chang (2002), McKinna et al. (2007) and Abu and Roslin (2008) found shoppers who look for convenience appreciate facilities that ease their shopping experience such as abundant parking spaces. Childers et al. (2001) noted that consumers choose to shop at retail outlets that offered lower

parking fees, a better assortment, more national brands, less travelling time and shorter check-out lines.

It is crucial for modern retail outlets to provide a good shopping experience. According to Levenburg (2005), many consumers are left unsatisfied as a result of poor customer service, long check-out queues, impolite tellers, ignorant staff and the non availability of advertised goods (Gagliano and Hathcote 1994). Similarly, the findings of this study found that elderly participants complained that:

> 'It is difficult to find assistance when doing grocery shopping at a supermarket. The services provided by vendors in most traditional markets and grocery stores are better'.

Conversely, the ability to provide specialised advice to their customers is an advantage for the traditional markets (Levy and Weitz 2001). The better service offered by knowledgeable vendors attracts customers to shop from the traditional market. Consumers prefer to buy from vendors who are able to provide them with information on the desired product (Trappey and Lai 1997).

6.4.3 Variety

Variety was another factor which influenced participants' choice of retail outlet. However, variety depends on what shoppers are looking for. One respondent from FG3 stated that:

> 'You can find a variety of traditional salads or *ulam* such as *petai, ulam raja* and *jering* at most traditional markets'.

At the same time, a greater variety of imported fresh produce was available from most modern retail outlets:

> 'There is a wide selection of fresh fruit and vegetables at supermarkets and hypermarkets. I purchase imported produce such as potatoes, pears, grapes, as well as organic produce at these outlets'.

Another participant added:

> ‘I like to shop at modern retail outlets because they have a lot of sections: wet and dry’.

Modern retail outlets are fast gaining popularity in Malaysia, attracting consumers with their ‘one-stop’ and ‘all-under-one-roof’ concepts. The ‘one-stop’ shop is a major strength for new retail formats (Hansen 2003). Supermarket shoppers are attracted by product variety and feelings of satisfaction (Trappey and Lai 1997).

According to Clark (2008), the concept of ‘one-stop’ shopping includes combining shopping for food and carrying out other activities like banking. For instance, many modern retail outlets in Malaysia combine a large supermarket or hypermarket with several other shops which offer services such as banking, food, clothing and entertainment, all under the same roof.

However, the disadvantage of offering more variety is the associated cost of carrying a greater assortment of each product category (Hansen 2003). According to Goldman et al. (1999), supermarkets initially focused on packaged and processed food lines. In the 1980s, supermarkets decided to emphasise fresh food lines, but offered only a limited range.

6.4.4 Freshness

Freshness is a factor which attracts consumers to shop from both modern and traditional retail outlets. According to Toivonen and Brummell (2008), appearance and the texture of fresh fruit and vegetables are the two main attributes that are most often associated with quality. By looking at both quality attributes, consumers can then decide which fruit and vegetables to buy and where to buy them from. However, appearance by itself may be a misleading attribute to determine the freshness of fruit due to the application of wax. Therefore, texture is the crucial quality attribute in determining the freshness of fruit and vegetables. However, unless the store offers samples to consumers, texture can only be evaluated post-purchase at the time of consumption.

Modern retail outlets have the advantage of offering fresh fruit and vegetables in refrigerated display units. Furthermore, supermarkets and hypermarkets have the advantage of good retail procurement logistics, technology and inventory management (Reardon et al. 2003).

As for the traditional market, goods are fresh during the early hours of business, but in a tropical climate like Malaysia, fruit and vegetables will quickly wither when being displayed in an open space without refrigeration. Pérez-Lizaur et al. (2008) indicate that freshness is among the most essential quality attributes consumers use when shopping for fresh fruit and vegetables. Primary food shoppers in Hong Kong viewed vegetables in traditional markets as "more fresh" (Goldman et al. 1999). They emphasised the freshness of vegetables in traditional markets, given that vegetables were delivered directly from wholesale markets and the fact that vendors constantly trimmed, sprayed, cleaned and sorted. In contrast to the modern retail outlets, even although they have refrigeration, shoppers in Hong Kong interpreted the lack of storage space and refrigeration as being positive, for fresh fruit and vegetables had to be cleared daily, which further enhanced their freshness.

6.4.5 Sales promotions

Modern retail outlets have the ability to attract more customers through sales promotions due to their large marketing budgets. However, Trappey and Lai (1997) argue that sales promotions do not have a negative impact on the traditional market. Although traditional markets might loose younger shoppers who are attracted by sales promotions in modern retail outlets, older consumers are loyal to the traditional markets as they infrequently leave their neighbourhood to shop. Studies by Trappey and Lai (1997) have shown that supermarket shoppers are less loyal than wet market shoppers. While some 96.0% of supermarket shoppers in Taiwan visit other supermarkets, only 71.0% of those buying from the traditional markets visit other wet markets.

A number of young shoppers from FG2 mentioned that they shop from modern retail outlets to get shopping points. For example, Tesco has introduced Clubcard. Customers who shop at Tesco receive points whenever they shop at Tesco. These

points may be converted into money-off Clubcard vouchers for customers to enjoy on their next shopping visit.

Besides promoting other household products, fruit and vegetables are also being advertised electronically and via the mass media. Several hypermarkets and supermarkets such as Carrefour, Tesco and Giant often advertise fresh fruit and vegetables on television, in newspapers and catalogues. Consumers are attracted by these sales promotions for they can save a considerable amount of money.

In-store tasting is another example of sales promotion. It is an approach to provide more product information to consumers before buying the product (Chang and Burke 2007). Both modern retail outlets and traditional markets offer this service to consumers.

6.4.6 Good environment

The store environment was again mentioned as another factor which may influence consumer's choice of retail store. One participant commented on the condition of a modern retail outlet:

> 'Although supermarkets and hypermarkets have their own wet sections where the layout is set up similar to the traditional markets, this section is always clean. I feel comfortable when I do my grocery shopping here'.

Another participant agreed and mentioned:

> 'Modern retail outlets are clean and air-conditioned. It helps make the shopping experience comfortable and pleasant'.

The condition of most traditional markets is the opposite of what shoppers experience when visiting supermarkets and hypermarkets. A young participant from FG4 commented:

> 'Traditional markets are dirty. The place is over-crowded with people, which makes it difficult to select products that you want to buy'.

Another participant added:

> 'Traditional markets are not a place to bring your children along, especially babies and toddlers. The place is hot and smelly'.

Despite portraying traditional markets as having a poor environment, the traditional markets continue to offer goods and services which attract loyal customers. Trappey and Lai (1997) indicate that the poor environment had less impact on shoppers coming to traditional markets. The traditional markets offered a more convenient location, a greater variety of products and superior product quality, which far outweighed the inferior shopping atmosphere (Trappey and Lai 1997; Goldman et al. 1999; Hsu and Chang 2002). The strong bond between vendors and their customers also explains why consumers continue to shop at traditional markets.

6.5 Review and implications

The results of the preliminary study provide a basis for identifying the factors that most influence consumers in their choice of retail store when purchasing fresh/chilled meat and fresh fruit and vegetables. Even though modern retail outlets are expanding, purchasing both types of fresh food from traditional markets is still the preferred place of purchase in Malaysia.

Similar criteria (freshness, competitive price, convenience and variety) were identified by consumers who preferred to purchase their fresh/chilled meat and fresh fruit and vegetables from traditional markets (Table 6.4).

Additional criteria such as having a good relationship with retailers, the meat is of good quality and Halal guaranteed enables traditional markets to emerge as being the preferred place of purchase for fresh/chilled meat.

Table 6.4: Factors attracting consumers to purchase fresh food supplies from modern retail outlets and traditional markets

Factors attracting consumers	Fresh/chilled meat		Fresh fruit and vegetables	
	Modern retail outlets	Traditional markets	Modern retail outlets	Traditional markets
Freshness	√	√	√	√
Halal guaranteed		√		
Good relationship with retailers		√		
Good quality		√		
Competitive price	√	√	√	√
Convenience	√	√	√	√
Varieties	√	√	√	√
Good environment	√		√	
Sales promotions			√	

The findings of this research suggest that older consumers are more likely to continue to buy from the traditional markets. These findings are not dissimilar to Trappey and Lai (1997) and Zinkhan et al. (1999). Older shoppers appreciate more the relationship built between themselves and their preferred vendor. Even although traditional markets provide a less pleasant environment, in this environment, interpersonal relationships thrive and the community is brought closer together. Shoppers visit traditional markets not only to buy goods, but also to meet friends and acquaintances. Even so, Hsu and Chang (2002) indicate that grocery shoppers who purchase fresh meat from supermarkets tend to keep shopping from the same location.

On the other hand, supermarkets and hypermarkets have the advantage of offering a pleasant environment in which to shop and good sales promotions for their patrons. Beside food safety, the supermarkets are attracting more shoppers on the basis of convenience and a good atmosphere (Gorton et al. 2009). For traditional retailers, it may be difficult for them to be competitive in providing such pleasant surroundings for their consumers. According to Ho (1999), by Western standards, wet markets will always hold the image of being overcrowded, noisy, dirty and unhygienic. Conversely, Trappey and Lai (1997) reveal how supermarkets in Taiwan adapt store layouts which resemble traditional markets in order to encourage social interactions between their staff and customers, as well as attracting more elderly customers.

In terms of sales promotions, supermarkets were described as being extremely active in reaching as many shoppers as possible, while traditional retailers were generally passive. According to Lui (2008), shoppers were bombarded by supermarket advertisements everyday through the print media or electronically. Although there is no urgency to purchase, gullible shoppers may be motivated to purchase when learning about the discounted price of certain products.

The findings of this study indicate that younger shoppers occasionally purchase their fresh fruit and vegetables from supermarkets and hypermarkets to get shopping points or were attracted by the in-store tastings. When it comes to meat, some modern retail outlets have taken the time to conduct some in-store tastings by conducting cooking demonstrations. However, neither of these approaches will attract the Muslim shoppers. Bonne and Verbeke (2006) confirm that Muslim consumers who hold strong religious beliefs are most concerned about the Halal status of meat products. Muslims who have any doubts about the Halal status are unlikely to purchase and consume these products (Zakaria 2008). Ahmed (2008) explored several issues relating to the marketing of Halal meat in supermarkets in the UK. These findings have a few implications for modern retailers to; advertise in Islamic newspapers, supply other complementary Halal products, and the ability for shoppers to easily access sales people who are able to provide advice on particular Halal products.

Urbanisation and the increase in personal disposable income has influenced shoppers, especially the younger shoppers (Hsu and Chang 2002). Younger shoppers value more the convenience factor that supermarkets and hypermarkets have to offer. According to Hsu and Chang (2002), there is a tendency for grocery shoppers to change their shopping habits and to shift to modern retail outlets for meat products due to food safety issues. This is an advantage for modern retailers as perishable products are being displayed and stored in chilled and refrigerated cabinets. As fresh meat sold in modern retail outlets remains fresh for longer, supermarkets and hypermarkets have the advantage of offering a more competitive price on a greater variety of products.

7. Main research methodology

7.1 Chapter Outline

This chapter begins with the research design, followed by a description of the sampling process. A quantitative questionnaire is designed from an extensive review of the literature on store choice, food quality, consumers' attitudes and preferences with regard to their decision to purchase fresh/chilled meat or fresh fruit and vegetables. The translation process for both questionnaires is described, followed by the data collection process and statistical techniques used to analyse the data. The chapter concludes with a brief summary of the impediments encountered by the researcher in obtaining the data required.

7.2 Research design: quantitative research method

According to Malhotra et al. (2008), to address a new marketing research problem, quantitative research should be preceded by qualitative research. Subsequent to an initial exploratory investigation, a structured quantitative research design was initiated to achieve the desired research objectives. Creswell (1994, p. 2) defined quantitative research as a study based on testing theory composed variables, measured with numbers, and analysed with statistical procedures, in order to determine whether the predictive generalisations of the theory hold true.

This study will use the survey method, which requires the development of a structured questionnaire given to a sample of a population which is designed to elicit specific information from respondents (Malhotra et al. 2008). Tull and Hawkins (1990) confirm that the survey method can provide data on attitudes, feelings, beliefs, past and intended behaviours, knowledge and personal characteristics, which, in the main, comprise the research objectives of this study. Furthermore, the survey method is the most common method of primary data collection in marketing research. It is simple to administer and can provide reliable data where responses are limited to the stated alternatives (Malhotra et al. 2008).

A survey can be administered in a number of ways; (1) personal interviews, (2) telephone interviews, (3) mail interviews and (4) electronically through either email or the internet. Since the survey instrument was quite large and involved 20 to 30 minutes of the respondents' time to complete, the researcher considered personal face-to-face interviews to be the most appropriate means of data collection. As the research design utilised a Likert scale, Coelho and Esteves (2007) were able to demonstrate that respondents interviewed over the telephone often had difficulty discriminating between answers using more than a five point scale. Furthermore, Zulkefly and Baharudin (2009) revealed that Malaysians are increasingly using mobile phones rather than a fixed line telephones. In the absence of a mobile telephone directory, some difficulties were anticipated in the administration of the survey by telephone interview: (1) difficulties in identifying whether the mobile was used for business or personal purposes; (2) subjects might often be in an environment (meeting, working, driving, walking) which would make it difficult to spend time on the telephone; and (3) not everyone can afford to own a mobile phone. Zulawski and Wicklander (2002) mentioned that through telephone interviews, the interviewer cannot control the interview, given that the interviewer cannot determine whether the subject is paying attention to the conversation as communication is only limited to the verbal channel. Additionally, Fink et al. (2003) demonstrate without some prior knowledge of the respondents, interviews may be conducted with persons living outside the sampling area.

Mail interviews was not considered as an option due to the non-availability of a complete mailing list, the time involved (distributing and waiting for respondents to return the survey), the low response rate and the cost involved. Gregg (2002) and Malhotra et al. (2008) agree that mail can be highly effective if the researcher is able to procure a current mailing list compiled from telephone directories or some association or membership that is close related to the population of interest. However, the biggest disadvantage of this method is the low response rate compared to telephone interviews and face-to-face interviews. As mentioned by Gregg (2002), a response rate of 50.0% is not unusual for a mail survey. Ray (2008) agrees that the typical mail survey has a return rate of below 50.0%. A researcher who decides to undertake a mail survey for a research study should be aware that response levels to this particular type of survey are quite low – around 20 to 25.0%

(Szwarc 2005). Wimmer and Dominick (2005) mentioned that the response rates for mail surveys range from 1 to 4.0%.

According to Rich (2009), utilising the internet through email is not an effective method for interviewing people. This is because subjects have some time to think about their responses. Furthermore, the researcher is seldom able to gather descriptive details or to observe subjects' body language or reactions towards the survey. Additionally, Bakar and Crump (2005) report that a digital divide exists in Malaysia where not everyone is computer literate, owns a computer or can afford to subscribe to the internet. Upon weighing the advantages and disadvantages of the alternative methods of data collection, the researcher decided that personal face-to-face interviews were the most appropriate means.

Personal interviews may be categorised as in-home, central location or computer assisted (Malhotra et al. 2008). In this study, the central location personal interview method, based on selected shopping malls and traditional markets, was considered to provide the most appropriate means of data collection. Over recent years, the number of market researchers using the shopping-mall intercept method as the primary means of data collection has increased tremendously, due to the fact that it is becoming more difficult and more costly to use door-to-door interviews (Bush and Hair 1985). According to Hair (2008), the shopping mall intercept method is less expensive and more convenient because the researcher does not need to spend much time or effort in securing a person's willingness to participate in the interview because both are already at a common location. Potential respondents are intercepted and interviewed as they arrive or as they are about to leave the shopping precinct.

In both surveys, the majority of questions were pre-coded. However, bias can be potentially created where the researcher fails to provide other possible answers or to provide an opportunity for respondents to answer differently. The pre-coded response options are designed to force respondents to make choices that may not be entirely correct. In this study, respondents were forced to choose the level of agreement or disagreement with the statements given. However, Dornyei (2003) indicated that these types of questions are ideally suited for quantitative and

statistical analyses as the response options can be easily coded and entered into a computer database. At several points in time, respondents were also given the opportunity to express their general attitudes and opinions. For this reason, a qualitative element was found to be desirable to support, to explain or to verify the findings obtained from the quantitative data.

7.3 Sampling design process

A research design consists of either a census or a sample. A census involves a complete enumeration of the elements of a population (Malhotra et al. 2008). As mentioned by Kolb (2008), it is possible for a researcher to conduct a census given that the number of people from whom information is needed is small, especially where the members of the population can be easily reached. However, a researcher may encounter problems with a census when some people refuse to participate or some people are not reachable. Boyce and Boyce (2004) mentioned that it is better to conduct a census when the research findings may be seriously distorted if some elements of the population are not included. However, Malhotra et al. (2008) suggested that the use of a census was unrealistic if the population involved in the research was large. Other limitations such as money and time constraints may also force the researcher to consider the use of sampling.

A sample is a subgroup of the population which is selected to participate in the study (Malhotra et al. 2008). A sample statistic is an estimation of a population parameter (Boyce and Boyce 2004) and thus statistics are used to make inferences about the population parameters. In this study, the use of a sample was considered because: (1) the research was undertaken on a tight budget with limited resources. Given the time allocated and approved by the researcher's sponsor, data collection had to be completed in no more than three months; and (2) given that the population elements were widely scattered across the Klang Valley region, face-to-face interviews could be readily carried out within a variety of shopping malls and traditional retail markets.

7.3.1 Defining the target population

Malhotra et al. (2008, p.470) define the target population as the collection of elements or objects that possess the information sought by the researcher and about which inferences are to be made. Wrenn et al. (2002) suggested that, in order to define the population of interest, it should be related back to the research objectives. Ideally, the target population should be defined in terms of:

(1) elements. This is the object from which the information is obtained. Generally, the element in a survey is the respondent. Ideally, respondents should be responsible for some if not all of the decisions to purchase fresh/chilled meat or fresh fruit and vegetables either for themselves or their household to be eligible to participate in this study. No limits were imposed on age, gender, ethnicity, religion or education levels. Persons who were not responsible for the purchase of fresh food products were excluded from the survey.

(2) sampling units. The sampling unit for this study was the household as represented by the person who made the decision to buy fresh/chilled meat or fresh fruit and vegetables for consumption by their immediate family members. The respondent who agreed to participate in this study was not necessarily the head of the household. In most cases, the head of the household was the husband who provides the money to meet the household's expenses, yet the decision to purchase food products was most often made by a female.

(3) extent. This refers to any geographic boundaries. In this study, the Klang Valley was chosen as the research area for a number of reasons: (a) geographically, the Klang Valley lies between Selangor state and the Federal Territory which includes large cities like Kuala Lumpur (the national capital of Malaysia), Putrajaya, Shah Alam and Klang; (b) the availability of both modern retail outlets and traditional markets; and (c) it is a region which holds a good mixture of potential respondents with different levels of education, income distribution and ethnicity, which are anticipated to have some impact on the purchase and consumption of both fresh/chilled meat and fresh fruit and vegetables.

(4) product class. The survey will focus only on the purchase of fresh/chilled meat and fresh fruit and vegetables from a retail store.

7.3.2 Determining the sampling frame

A sampling frame consists of a list or set of directions for identifying the target sample (Malhotra et al. 2008). The sampling frame for this study was set as follows:

(1) the researcher, with the help of two research assistants were stationed at either a modern retail outlet or traditional wet market for a period of one week from 10 am to 8 pm daily. Within this time frame, the researcher hoped to capture those working and non-working respondents who were responsible for the purchase of fresh/chilled meat and/or fresh fruit and vegetables for their household.

(2) a few screening questions were used to pre-qualify respondents:

   (a) nationality and place of residence. Expatriates who were residing in the Klang Valley were excluded from the survey. The motive to exclude expatriates was to meet the objective of the research which was to understand the perceptions and experiences of Malaysian consumers in the Klang Valley when purchasing fresh food from a retail store. Individuals who were not residing within the Klang Valley region such as those who just happened to be at the research location during that period, but were from states other than Selangor and the Federal Territory were excluded from the survey in order to conform to the geographic boundaries of the study. A decision was also made to exclude domestic helpers who take care of the children, cook and clean the house. Khalid (2009) estimates that around 300,000 Indonesians work as domestic helpers in Malaysia. Although the number of domestic helpers is large, these individuals are best excluded from the survey because they do not represent the Malaysian population as a whole.

   (b) respondents' had to be personally involved in the decision to purchase either fresh/chilled meat or fresh fruit and vegetables for their household. Individuals who purchased fresh food items from food services such as restaurants and hawker stalls were excluded from this survey.

   (c) each respondent was asked in advance to allocate 20 minutes of their time to complete the survey. A 20 minute time frame, which was pre-tested, was found to give sufficient time for the respondent to complete the survey. If more time was spent, the chance of gathering incomplete survey responses was anticipated to increase.

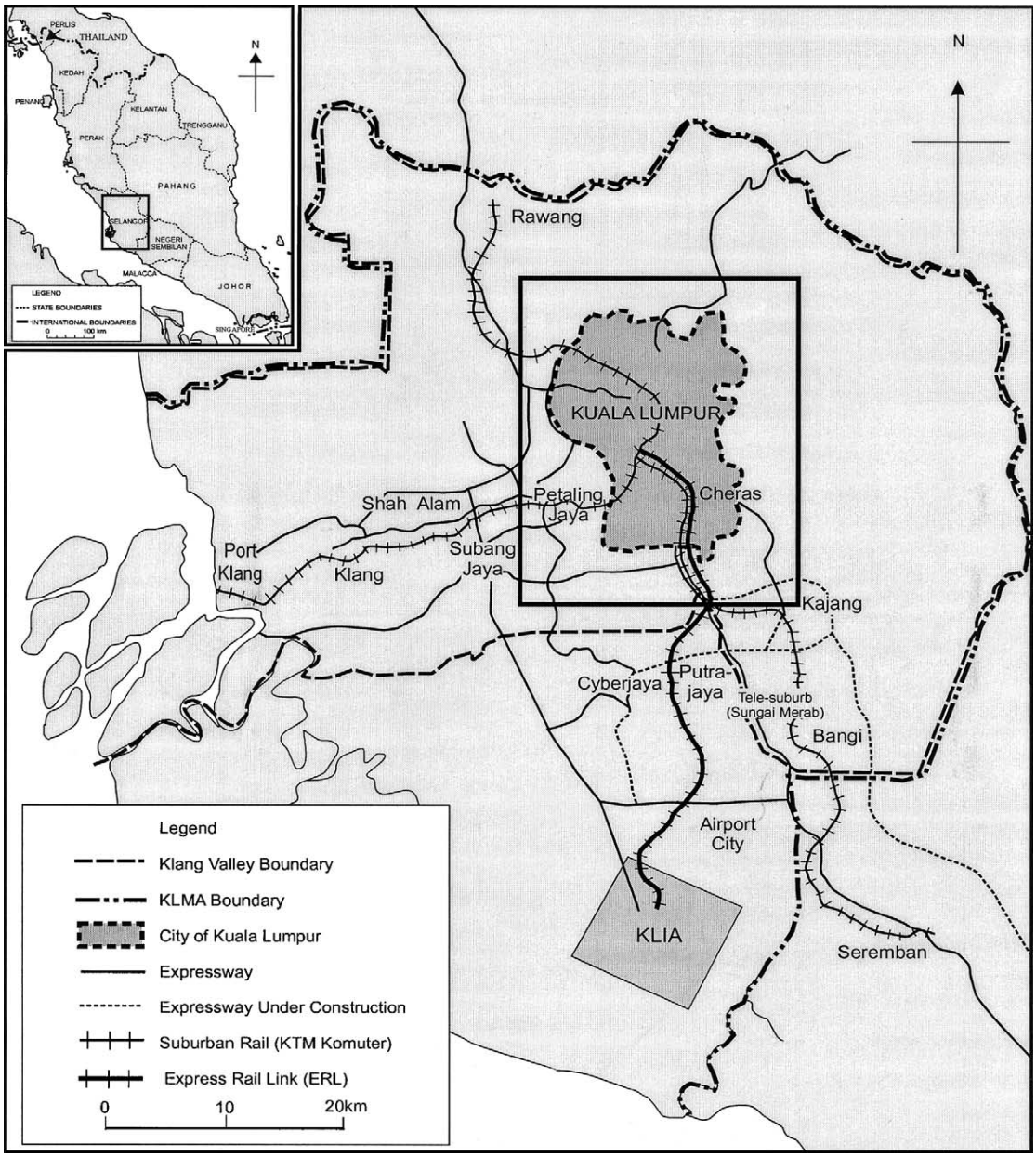
7.3.3 Select a sampling technique

The researcher needed to decide whether to utilise a probability or non-probability sampling technique. Probability sampling refers to selection procedures in which elements are randomly selected from the sampling frame and each element has a known change of being selected (Reis and Judd 2000). Conversely, the selection of the sample elements in non-probability sampling is not by chance because the selection relies upon the personal judgement of the researcher (Malhotra et al. 2008). The sampling technique used to select respondents in this study was based on probability sampling. This choice was made based on a number of considerations. As mentioned by Kumar (2008), when extensive geographic areas need to be covered with minimum travelling costs, multi-stage area sampling is most appropriate. By referring to the sampling frame, constraints and limitations, the researcher decided to select the respondents using a three-stage area sample.

The first stage involved a cluster sampling technique, which related to the area of the study: the Klang Valley region. Aiken and Leigh (1975) mentioned that the Klang Valley region includes Rawang, which is in the northern part of the state of Selangor, and Kajang, which is in the southern part of Selangor. In a more recent study, Bunnell et al. (2002) mentioned that the Klang Valley region has been extending southwards in conjunction with the development of the Kuala Lumpur International Airport (KLIA) around Sepang, which is about 60 km from Kuala Lumpur (Figure 7.1).

Seven principal cities were selected randomly for this survey: Kuala Lumpur, Shah Alam, Petaling Jaya, Ampang, Kajang, Putrajaya and Puchong.

Figure 7.1: Map of the Klang Valley region.



Source: Adapted from Bunnell et al. (2002).

In the second stage, the researcher made a list of modern retail outlets and traditional markets available in the cities that had been selected. The list of supermarkets, hypermarkets and grocery stores/mini-markets were drawn from the Malaysia Yellow Pages, while the list of traditional markets operating in the Klang Valley were obtained from the website of the Federal Agricultural Marketing Authority (FAMA). In order to select the retail outlets for this study, the researcher had to consider two factors: (1) the time allocated for data collection (12 weeks); and (2) the period for the researcher and two research assistants to be stationed at a

retail outlet (10 am to 8 pm for a period of one week). Subsequently, the researcher decided to spend six weeks at six selected modern retail outlets and another six weeks at six selected traditional retail outlets. These retail outlets were selected randomly.

The third step involved the selection of the respondents. The researcher and two research assistants were stationed at different entrances of the retail outlet. This was to ensure that most of the shoppers which visited the retail outlet at that particular time had some chance of being selected to participate in this study. To ensure randomness, shoppers passing by the station were counted and every 7^{th} person was intercepted. According to Malhotra et al. (2008), picking every n^{th} element is known as systematic sampling, where each population element has a known and equal probability of selection. Furthermore, selecting respondents through systematic sampling could avoid the respondents being selected based on the personal judgement of the researcher. The data collection process was conducted at the same period of time everyday at each retail outlet in order to standardise the results and to reduce sampling error. Nevertheless, the researcher was aware that some people who may be working on night shift could be excluded from the study.

7.3.4 Determining the sample size

A number of factors were considered in determining the sample size for this study:

(1) statistical requirement. Depending on the type of statistical analysis to be performed, an appropriate sample size was required to facilitate the analyses. For example, there are two general recommendations in determining the minimum sample size for factor analysis, which are the absolute number of cases (*N*) and the subject-to-variable ratio. Comrey and Lee (1992) [cited in Field 2009] came up with the Rule of 500, which classified 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 or more as excellent. Hair et al. (1998) recommended that the number of participants should be in the ratio of 20:1 in relation to the number of variables. As recommended by Field (2009), a sample of 300 or more will probably provide a stable factor solution. However, Field (2009) added that it was important to ensure that enough variables are included in the research to adequately measure all of the factors.

(2) data collection process. Since the personal interviewing of potential respondents was undertaken by the researcher with the help of only two research assistants, with a limited budget and time constraints, a large sample size was impractical.

Having considered these factors, the researcher determined that a sample of between 500 to 600 respondents would be appropriate, with 250 to 300 respondents for each survey. To ensure good representation and to minimise sampling error, respondents who participated in both surveys were different individuals. In other words, respondents were not allowed to answer both surveys but were required to answer either the fresh/chilled meat survey or the fresh fruit and vegetables survey. Subsequently, this allows the results of the two studies to be compared.

7.4 Questionnaire design

The survey instrument for this research consisted of two questionnaires which discussed consumer's perceptions and experiences of food quality in purchasing fresh/chilled meat (Appendix 3) and fresh fruit and vegetables (Appendix 4). The questionnaires were designed using a combination of both closed and open-ended questions. For the structured questions, a variety of alternative measures were utilised including multiple-choice, dichotomous and scale questions.

With regard to the use of scales, there was considerable discussion about the appropriate use of either an odd or even-numbered scale. Coelho and Esteves (2007) argued that an even-numbered scale is the preferred choice of response alternatives in research associated with consumer attitudes and preferences. Respondents were perceived to have at least a slightly positive or slightly negative response rather than a neutral response. Si and Cullen (1998) confirmed that different cultural groups respond in a different way to surveys using explicit midpoint responses. With an odd-numbered scale, Coelho and Esteves (2007) demonstrated that the middle-point was often used by respondents who preferred to reduce the response effort, which not unexpectedly, impacted adversely on the quality of the data. Mitchell (1999) revealed that Asian respondents preferred to use the middle of the scale when responding to surveys. Bishop (1987) suggested that in

order to prevent respondents from choosing the middle-point, an even numbered scale should be employed. In light of the literature review, it was determined that a six-point scale was the most appropriate for this survey.

Open-ended questions or unstructured questions were also included in the survey. Here, respondents were allowed to freely convey their views with regards to the topic of interest. Unstructured questions assist the researcher in obtaining a greater understanding of the topic, while also ensuring that no major variables were excluded for the fixed response question sets.

Both questionnaires were divided into four sections (Table 7.1). The first page of each survey had an introductory page which described the purpose of the study, the requirements for respondent eligibility and a brief explanation of the gift (a green bag). Related questions were arranged and grouped together in separate sections to facilitate a better flow. Past researchers have recommended that the questionnaire should begin with simple questions which reflect the theme of the research (Lehman 1985; Batt 2003; Mokhlis 2006; Malhotra et al. 2008).

Table 7.1: Structure of questionnaires

Fresh/chilled meat questionnaire		**Fresh fruit and vegetables questionnaire**	
Section 1	Store choice behaviour and quality	Section 1	Store choice behaviour and quality
Section 2a	The purchase of fresh/chilled chicken	Section 2a	The purchase of fresh potatoes
2b	The purchase of fresh/chilled beef	2b	The purchase of fresh spinach
		2c	The purchase of fresh apples
Section 3	Dissatisfaction and food safety issues	Section 3	Dissatisfaction and food safety issues
Section 4	Socio-demographic factors	Section 4	Socio-demographic factors

Both questionnaires discussed similar themes under the same section; Section One, Three and Four. The main difference between each of the questionnaires was found in Section Two, which examined the purchase of different types of food products.

Section 1: Store choice behaviour and quality

For both surveys, Section One sought to gather information regarding the store choice behaviour of the respondents and their perceptions of the quality of the respective commodity (fresh/chilled meat or fresh produce).

Question One sought to identify the preferred place to purchase fresh/chilled meat or fresh fruit and vegetables.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
From where do you buy MOST of the fresh/chilled meat that you consume in your household? (Becker 2000, Becker et al. 2000, Glitsch 2000, Hsu and Chang 2002, Bernues et al. 2003, Bonne and Verbeke 2006, Krystallis and Arvanitoyannis 2006, Liu et al. 2006)	From where do you buy MOST of the fresh fruit and vegetables that you consume in your household? (Zinkhan et al. 1999, Pollard et al. 2002, Reardon and Berdegue 2002, Ragaert et al. 2004, McKinna et al. 2007)
[Multiple responses: Supermarket; Hypermarket; Wet market/Fresh market; Farmers market; Night market; Wholesale market; Grocery store/Mini market] (Categories were based on Zain and Rejab 1989, Malaysia 2006 and results of preliminary research)	

As both fresh meat and fresh produce are perishable items, it was necessary to gather information on the frequency of purchase. Whereas consumers often purchase non-perishable items in bulk and store the products for a long period of time for future consumption, perishable foods are generally purchased in smaller quantities on a more frequent basis (Zinkhan et al. 1999). Shepherd (2005) suggested how the greater ownership of cars and refrigerators in Asia was influencing the place, regularity and the quantity of fresh food purchased at any one time. Shamsudin and Selamat (2005) reported that nearly 90.0% of the households in Malaysia have refrigerators.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
How often do you purchase fresh/chilled meat from this retail outlet? (Becker et al. 2000, Goldman and Hino 2005, Krystallis and Arvanitoyannis 2006)	How often do you purchase fresh fruit and vegetables from this retail outlet? (Zikhan et al. 1999, Becker et al. 2000, Tam 2006, McKinna et al. 2007, Yoo et al. 2006)
[Multiple responses: Daily; 2-3 times per week; Once a week; Once every 2 weeks; Once a month; Others (please specify)] (Categories were based on results of preliminary research)	

Several factors such as the availability, price and promotional campaigns, time constraints, impulsive buying and convenience may influence cross-shopping behaviour among consumers (Skallerud et al. 2009). Most modern retail outlets are known for offering large assortments of food and non-food items. However, consumers may also go to other stores which offer high quality products. Results from the preliminary research demonstrated that consumers cross-shopped when purchasing imported beef or minced meat which were not available from any of the traditional markets. Similarly, consumers purchased most imported fruit and vegetables from the supermarkets or hypermarkets, but purchased local fruit from the traditional market. Consumers who were searching for convenience and value-added products may choose to visit modern retail outlets as these stores offer semi-prepared vegetables that are washed, trimmed, cut and ready to cook instantly (Brookes 1995). The desire to purchase ready-to-eat and ready-to-cook fresh fruit and vegetables is emerging among Malaysian consumers.

Fresh/chilled meat questionnaire	**Fresh fruit and vegetables questionnaire**
What proportion of the total amount of the fresh/chilled meat that you buy is purchased from this retail outlet? From where else do you purchase fresh/chilled meat? Please tick all of those retail outlets from which you purchase fresh/chilled meat and indicate the proportion of the fresh/chilled meat that you buy. (Hsu and Chang 2002, preliminary research)	What proportion of the total amount of the fresh fruit and vegetables that you buy is purchased from this retail outlet? From where else do you purchase fresh fruit and vegetables? Please tick all of those retail outlets from which you purchase fresh fruit and vegetables and indicate the proportion of the fresh fruit and vegetables that you buy. (Brookes 1995, Yoo et al. 2006, preliminary research)
[Multiple responses: Supermarket; Hypermarket; Wet market/fresh market; Farmers market; Night market; Wholesale market; Grocery store/mini-market] (Categories were based on results of preliminary research)	

The next set of questions were designed to relate the preferred place of purchase with the quality cues that consumers utilised when purchasing fresh food. Steenkamp (1997) defined quality cues as information stimuli which are used to evaluate the performance of the product according to consumer demands. Quality cues included intrinsic variables (colour, shape, appearance and others) and extrinsic variables (store choice, brand, origin, packaging and other product

attributes). Consumers who have little expertise rely almost exclusively on extrinsic cues for quality selection (Becker et al. 2000). Moreover, past research has demonstrated that the place of purchase has a significant influence in communicating product quality and safety (Bernues et al. 2003; McEachern and Seaman 2005). Consumers often trust knowledgeable vendors in determining the quality of their fresh products (Glitsch 2000). Grunert (1997) demonstrated a correlation between the place of purchase and consumers' quality perception of meat in countries such as France, Germany, Spain and the UK. Zikhan et al. (1999) highlighted the importance of investigating why consumers purchased fresh fruit and vegetables from traditional markets compared to other retail stores.

Results from the preliminary research identified two alternative groups of retail store from which respondents purchased fresh food: (1) the modern retail outlets (supermarket and hypermarket) and (2) the traditional markets (wet market/fresh market, farmers market, night market, wholesale market, grocery store/mini market).

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
In making your decision to purchase fresh/chilled meat from your preferred retail outlet, what are the major criteria that influence your choice? (Grunet 1997, Hoffmann 2000, and Hsu and Chang 2002)	In making your decision to purchase fresh fruit and vegetables from your preferred retail outlet, what are the major criteria that influence your choice? (Zikhan et al. 1999)

When predicting the quality of product, consumers utilise only some quality cues. Engel et al. (1986) concluded that consumers generally utilised only three or four quality indicators when evaluating products. Thus, the quality cues perceived to be relevant and important were ranked accordingly (Hoffmann 2000).

However, there may be several other motivational factors that influence why consumers choose to go to a specific retail store as compared to the alternatives.

Respondents were asked to rate 35 criteria which were identified from the literature as being of some influence in the choice of preferred retail outlet, on a scale from 1 to 6, where 1 was "not at all important" and 6 was "very important".

Criteria	Sources
Competitive price	Grunert (1995), Zinkhan et al. (1999), Acebron and Dopico (2000), Becker et al. (2000), Hoffmann (2000), Farhangmehr et al. (2001), Flavian et al. (2001), Goldman et al. (2002), Hsu and Chang (2002), Pollard et al. (2002), Bernues et al. (2003), Bredahl (2004), Sinha and Banerjee (2004), Goldman and Hino (2005), McEachern and Seaman (2005), Skallerud et al. 2009.
Clean	Kawahara and Speece (1994), Zinkhan et al. (1999), Lo et al. (2001), Hsu and Chang (2002), Goldman and Hino (2005), Bonne and Verbeke (2006), Abu and Roslin (2008).
Easy parking	Zinkhan et al. (1999), Farhangmehr et al. (2001), Torjusen et al. (2001), Hsu and Chang (2002), Geuens et al. (2003), McKinna et al. (2007), Abu and Roslin (2008).
Everything all under one roof	Zinkhan et al. (1999), Farhangmehr et al. (2001), McEachern and Seaman (2005), Bonne and Verbeke (2006), McKinna et al. (2007), Abu and Roslin (2008).
Freshness	Kawahara and Speece (1994), Steenkamp (1997), Goldman et al. (1999), Zinkhan et al. (1999), Becker et al. (2000), Hsu and Chang (2002), Bernues et al. (2003), Kennedy et al. (2004), Goldman and Hino (2005), McEachern and Seaman (2005), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), McKinna et al. (2007).
Value for money	Pollard et al. (2002), Kennedy et al. (2004), McKinna et al. (2007).
Near my house/work place	Trappey and Lai (1997), Zinkhan et al. (1999), Torjusen et al. (2001), Goldman et al. (2002), Geuens et al. (2003), Sinha and Banerjee (2004), Goldman and Hino (2005), McEachern and Seaman (2005), Tam (2006), McKinna et al. (2007), Yoo et al. (2006).
Shopping points/loyalty programs	Sharp and Sharp (1997), Uncles et al. (2003), Leenheer et al. (2007), Demoulin and Zidda (2008).
Cater for kids	Goldman and Hino (2005), McEachern and Seaman (2005), Bonne and Verbeke (2006).
Trolley and baskets are provided	Zinkhan et al. (1999), Geuens et al. (2003), Pettigrew et al. (2005).
Air-conditioned	Trappey and Lai (1997), Goldman and Hino (2005).
Offer special prices or discounts	Trappey and Lai (1997), Zinkhan et al. (1999).
Well organized/well laid out	Zinkhan et al. (1999), Torjusen et al (2001), Tang et al. (2001).
A lot of sections (wet and dry sections)	Hsu and Chang (2002), Baltas and Papastathopoulou (2003), Goldman and Hino (2005).
I can self select	Zinkhan et al. (1999), Goldman and Hino (2005), McEachern and Seaman (2005).
Good customer service/friendly staff	Trappey and Lai (1997), Zinkhan et al. (1999), Hsu and Chang (2002), Sinha and Banerjee (2004), Ong and Phillips (2007), Abu and Roslin (2008), Bustos-Reyes and Gonzales-Benito (2008), Ong et al. (2008).
Attractive display/presentation	Hsu and Chang (2002), Bernues et al. (2003), Geuens et al. (2003), Kennedy et al. (2004), McEachern and Seaman (2005).

Good quality produce	Steenkamp (1990), Kawahara and Speece (1994), van der Pol and Ryan (1996), Trappey and Lai (1997), Zinkhan et al. (1999), Flavian et al. (2001), Hsu and Chang (2002), McEachern and Schroder (2002), Pollard et al. (2002), Baltas and Papastathopoulou (2003), Bernues et al. (2003), Goldman and Hino (2005), McEachern and Seaman (2005), Singh (2006), Bustos-Reyes and Gonzales-Benito (2008), Ong et al. (2008).
All product is clearly priced	Hoffmann (2000).
Knowledgeable staff	Becker et al. (2000), Torjusen et al. (2001), Bernues et al. (2003), Bustos-Reyes and Gonzales-Benito (2008).
Advertising on radio/tv/newspaper	Zinkhan et al. (1999), Becker et al. (2000), Volle (2001), Pollard et al. (2002), McEachern and Seaman (2005), McKinna et al.(2007), Lui (2008).
Return/refund policy	Park 2007, Kim 2008, Huong n.d.
Trading hours	Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Bonne and Verbeke (2006), Richbell and Kite 2007.
A wide range of fresh produce	Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Goldman and Hino (2005), McKinna et al. (2007).
A wide range of other fresh products	Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Goldman and Hino (2005).
Fresh produce is refrigerated	Hsu and Chang (2002), Pollard et al. (2002), Bernues et al. (2003), Goldman and Hino (2005).
Opportunity to bargain on price	Zinkhan et al. (1999), Maruyama and Trung (2007).
Origin of the product is clearly displayed	Becker et al. (2000), Hoffmann (2000), Bernues et al. (2003), Kennedy et al. (2004), McEachern and Seaman (2005), Krystallis and Arvanitoyannis (2006), McKinna et al. (2007).
Sample the product	Clark (1998), Zinkhan et al. (1999), Richter et al. (2000), Mowat and Collins (2000), Barlow et al. (2004).
Local produce	Hoffmann (2000), Torjusen et al. (2001), Bernues et al. (2003), McEachern and Seaman (2005), McKinna et al. (2007).
Product easily accessible	Adebanjo 2001, Bernues et al. (2003), Pettigrew et al. (2005), Ong and Phillips (2007), Ong et al. (2008).
Credit facilities	Zinkhan et al. (1999), Sinha and Banerjee (2004), Kurtulus and Nasir (2006), Ong and Phillips (2007).
Quick/fast checkout	Zinkhan et al. (1999), Goldman and Hino (2005), Ong and Phillips (2007), Abu and Roslin (2008).
Loyalty/always shop there	Zinkhan et al. (1999), Adebanjo (2001), Burke (2002), Hsu and Chang (2002), Goldman and Hino (2005), Bustos-Reyes and Gonzales-Benito (2008).
Product is clearly labelled	Brookes (1995), Becker et al. (2000), Hoffmann (2000), Hsu and Chang (2002), Bernues et al. (2003), Kennedy et al. (2004), McEachern and Seaman (2005), Krystallis and Arvanitoyannis (2006), McKinna et al. (2007), Ong and Phillips (2007), Ong et al. (2008).

Food quality is a complex issue (Becker et al. 2000). Perceived quality is assessed differently among different consumers. Food quality consists of product characteristics and process characteristics (Hoffmann 2000). Becker et al. (2000)

proposed that not all of these characteristics are important for all consumers. Hoffmann (2000) mentioned that consumers generally use three or four characteristics in judging product quality. As a result, the next question on food quality was presented as an open-ended question, in order to capture how respondents evaluated food quality.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
When you think about the quality of the fresh/chilled meat that you buy, what criteria do you consider? (Becker et al. 2000, Hoffmann 2000)	When you think about the quality of the fresh fruit and vegetables that you buy, what criteria do you consider? (Berdegue et al. 2005, Zenk et al. 2005, McKinna et al. 2007)

The term food quality can be defined in many ways depending on who is performing the evaluation (Moskowitz 1995; Wandel and Bugge 1997). For consumers, food quality is mainly related to taste, freshness, appearance, nutritional value and food safety. However, consumers in different societies are often interested in the impact that food production has on the environment and the ethical aspects of food production. As a result of these additional quality attributes, prices will increase, which may adversely affect the consumers' readiness to pay. The following group of questions were designed to measure the respondents' level of agreement/disagreement with the concept of quality. A six point Likert scale was utilised for this group of questions, where 1 was "I disagree a lot" and 6 was "I agree a lot".

Quality means that the product…	
is fresh	Zeithaml (1988), Wandel and Bugge (1997), Torjusen et al. (2001), Grunert et al. (2004), Rico et al. (2007).
is free from chemical residues	Molnar (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Grunert et al. (2004).
will taste good	Zeithaml (1988), Moskowitz (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Torjusen et al. (2001), Grunert et al. (2004), Grunert (2005), Rico et al. (2007).
is nutritious	Moskowitz (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Torjusen et al. (2001), Grunert et al. (2004), Grunert (2005), Rico et al. (2007).
is safe to eat	Caswell and Mojduszka (1996), Torjusen et al. (2001), Blokhuis et al. (2003), Grunert et al. (2004), Grunert (2005), Burlingame and Pineiro (2007), Rico et al. (2007), Ong et al. (2008).

has been produced in a way that is good for the environment	Caswell and Mojduszka (1996), Wandel and Bugge (1997), Torjusen et al. (2001), Blokhuis et al. (2003), Grunert et al. (2004), Grunert (2005).
was produced in a way that did not endanger the farmers	Caswell (2000), Burlingame and Pineiro (2007).
is free from pests and diseases	Molnar (1995), Torjusen et al. (2001), Bourn and Prescott (2002), Grunert et al. (2004).
is free from dirt and soil	Wandel and Bugge (1997).
is free from antibiotics/growth promotants	Grunert et al. (2004).
looks attractive	Rico et al. (2007).
will have a long shelf life	Molnar (1995), Moskowitz (1995), Bernues et al. (2003), Rico et al. (2007).
is good value for money	Zeithaml (1988), Cardello (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Grunert (2005).
I will not be disappointed when I eat the product	Grunert (2005), Sabbe et al. (2009).
I will be able to use most if not all of the product I have purchased	Zeithaml (1988), Grunert (2005), Campbell et al. (2009).
is attractively packaged	Molnar (1995), Caswell and Mojduszka (1996), Resurreccion (2003), Grunert et al. (2004), Grunert (2005).
will be more expensive	Cardello (1995), Moskowitz (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Zeithaml (1988), Grunert (2005).

Two additional statements for the fresh/chilled meat survey required respondents to indicate what influence Halal certification and animal welfare had on their perceptions of quality.

Quality means that the product is…	
is guaranteed Halal	Riaz and Chaudry (2004), Shafie and Othman (2006), Abu and Roslin (2008), Burlingame and Pineiro (2007), Ahmed (2008), Bonne and Verbeke (2008a), Talib et al. (2008), Wan Omar et al. (2008).
was produced and with due regard for animal welfare	Caswell and Mojduszka (1996), Wandel and Bugge (1997), Hoffmann (2000), Torjusen et al. (2001), McEachern and Schroder (2002), Blokhuis et al. (2003), McCarthy et al. (2003), Grunert et al. (2004), Grunert (2005), McCluskey et al. (2005), Maria (2006).

Since Section One was primarily about store choice and quality, the next group of questions were designed to determine the relationship between food quality and the preferred place of purchase for fresh/chilled meat and fresh fruit and vegetables.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
Do you perceive any differences in the quality of fresh/chilled meat between modern retail outlets and traditional markets? Which of the two retail outlets offer the best quality meat? In what ways is the quality of meat better from this retail outlet? (Grunert 1995, West et al. 2001, Brunso et al. 2002, Krystallis et al. 2007, Ahmed 2008)	Do you perceive any differences in the quality of fresh fruit and vegetables between modern retail outlets and traditional markets? Which of the two retail outlets offer the best quality fresh fruit and vegetables? In what ways is the quality of fresh fruit and vegetables better from this retail outlet? (Berdegue et al. 2005, Zenk et al. 2005, McKinna et al. 2007)

The following group of questions sought to measure the relationship between the respondents' perceptions of food quality and their preferred place to purchase fresh/chilled meat or fresh fruit and vegetables. A six point Likert scale was used, where 1 was "I disagree a lot" and 6 was "I agree a lot".

The quality of the [fresh/chilled meat or fresh fruit and vegetables] available is better in supermarkets.	Zenk et al. (2005).
Supermarkets operate everyday while traditional markets operate only on certain days of the week.	Goldman et al. 1999, Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Bougoure and Lee (2009).
Consumers can bargain on price in wet markets.	Wang (1999), Maruyama and Trung (2007), preliminary research.
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time.	Farhangmehr et al. 2001, Abu and Roslin (2008), Ahmed (2008).
I often meet my friends when I shop at traditional markets.	Trappey and Lai (1997), Goldman et al. (2002), Ahmed (2008).
Supermarkets offer a wider range of fresh food.	Bougoure and Lee (2009).
At traditional markets, the vendors remember my name.	Trappey and Lai (1997), Ahmed (2008).
I cannot buy the other household items I need if I shop at traditional markets.	Goldman et al. (1999).
I go to supermarkets because of the shopping points I get.	Zinkhan et al. (1999), Hsu and Chang (2002), Goldman and Hino (2005), Bustos-Reyes and Gonzales-Benito (2008).

The children feel comfortable when I shop at supermarkets.	Goldman and Hino (2005), McEachern and Seaman (2005), Bonne and Verbeke (2006), Abu and Roslin (2008).
Traditional markets seldom have a good or clean environment.	Goldman et al. (1999), Bougoure and Lee (2009).
Supermarkets offer better customer service than the traditional markets.	Abu and Roslin (2008), Bougoure and Lee (2009).
I can return easily goods if I'm not satisfied when I buy them from traditional markets.	Huong n.d., preliminary research.
I buy my other household goods from supermarkets but I buy my [fresh/chilled meat or fresh fruit and vegetables] from traditional markets.	Othman (1990), Goldman et al. (1999), Krystallis et al. (2007).
Traditional markets offer better quality of [fresh/chilled meat or fresh fruit and vegetables] at a much cheaper price.	Goldman et al. (1999), Bougoure and Lee (2009), Tam n.d.
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets.	Park (2007), preliminary research.
[Fresh/chilled meat or fresh fruit and vegetables] is displayed better in supermarkets.	Liu et al. (2006), Bougoure and Lee (2009).
[Fresh/chilled meat or fresh fruit and vegetables] are fresher in traditional markets.	Kawahara and Speece (1994), Goldman et al. (1999).
I prefer to buy my [fresh/chilled meat or fresh fruit and vegetables] from the same vendor in the traditional markets.	Farhangmehr et al. (2001), Goldman et al. (2002), Sinha and Banerjee (2004), Ahmed (2008).
Products in the supermarkets are clearly priced.	Hoffmann (2000).
Retailers in the traditional market are more knowledgeable about the products they sell.	Goldman et al. (2002), Sinha and Banerjee (2004), Bustos-Reyes and Gonzales-Benito (2008), Bougoure and Lee (2009).

Section 2a and 2b: Fresh/chilled meat questionnaire

Section Two of the fresh/chilled meat survey was organised to investigate consumers purchasing behaviour for fresh/chilled chicken (2a) and/or the purchase of fresh/chilled beef (2b). If respondents did not purchase and consume chicken, they were given the option to proceed to the next sub-section on beef. Any respondents who did not purchase and consume either fresh/chilled chicken or beef was excluded from the analysis.

Respondents were required to respond to a total of nine questions in each sub-section. The first question sought to investigate the frequency with which

Malaysians purchased fresh/chilled chicken and beef. McCarthy and O'Reilly (1999) revealed that consumers quality expectations were influenced by experience and experience in turn influenced future expectations. The strength of this relationship was dependent on the frequency of purchase. West et al. (2001) demonstrated that the frequency of purchasing a particular type of fresh/chilled meat did influence the consumers' perceptions of meat quality.

Thinking specifically about [type of fresh/chilled meat], how often do you purchase them? (McCarthy and O'Reilly 1999, Glitsch 2000, West et al. 2001, Verbeke and Vackier 2004, McCluskey et al. 2005, Norimah et al. 2008, Sepulveda et al. 2008, Brunton 2009)
[Multiple responses: Daily; 2-3 times per week; Once a week; Once every 2 weeks; Once a month; Others (please specify)] (Categories were based on results of preliminary research)

The next question required the respondents to state their preferences for which proportion or part of the fresh/chilled meat they purchased.

In what form do you most often buy [type of fresh/chilled meat]? Please indicate the proportion (%) for EACH form that you buy. (Egan et al. 2001, Hsu and Chang 2002, Kennedy et al. 2004, Krystallis and Arvanitoyannis 2006, Brunton 2009)
[Multiple responses for chicken: whole dressed chicken, chicken portions, chicken drumsticks, fillets skin on, fillets skin off, chicken wings, chicken feet, chicken liver, chicken ribs/keel, chicken center, chicken minced, chicken bishop, chicken cubes, chicken breast, chicken thigh, chicken gizzard] [Multiple responses for beef: beef cube, beef strip, beef chuck tender, beef eye round, soup meat, beef minced, beef bone (soup), beef cutlet, beef t-bone, beef fillet, beef topside, beef tenderloin, ox tail] (Categories were based on the results of the preliminary research and the researcher's observation on the variety of parts of fresh/chilled meat available in both retail outlets)

Respondents were then asked to indicate the method most often used to cook the fresh/chilled meat.

How do you cook [type of fresh/chilled meat] in your household? (Egan et al. 2001, Goldman and Hino 2005, Brunton 2009)

An open-ended question on the criteria respondents most often utilised in their decision to purchase either fresh/chilled chicken or beef was presented in order to ensure that no major variables had been excluded for the fixed response set that was to follow.

What criteria do you use in your decision to purchase [type of fresh/chilled meat] from retail outlets? (Hoffmann 2000, McEachern and Schroder 2002, McCarthy et al. 2003, McCluskey et al. 2005, Krystallis and Arvanitoyannis 2006, Liu et al. 2006)

Respondents were then presented with 24 criteria which were thought to be most influential in the consumer's decision to purchase fresh/chilled chicken and/or beef from a retail store. A six point Likert scale was utilised where respondents were required to rank the importance of each criteria, where 1 was "not at all important" and 6 was "very important".

Criteria	Sources
Appropriately slaughtered (Halal)	Pointing and Teinaz (2004), Bonne and Verbeke (2006), Ahmed (2008).
Halal certificate	Bonne and Verbeke (2006), Shafie and Othman (2006), Ahmed (2008).
Quality assurance label	Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), Sepulveda et al. (2008).
Freshness	Egan et al. (2001), McEachern and Schroder (2002), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), Liu et al. (2006).
Skin colour	McEachern and Schroder (2002), Bonne and Verbeke (2006).
Flesh colour	Barbut (2001), Egan et al. (2001), Killinger et al. (2004), Liu et al. (2006), Krystallis and Arvanitoyannis (2006).
Smell/odour	Bonne and Verbeke (2006), Liu et al. (2006).
Country-of-origin	McEachern and Schroder (2002), Krystallis and Arvanitoyannis (2006).
Intended use	Barbut (2001), Brunton (2009).
Fat content	Egan et al. (2001), McEachern and Schroder (2002), Killinger et al. (2004), McCluskey et al. (2005), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006).
Clean/no flies	Egan et al. (2001), Bonne and Verbeke (2006), Ahmed (2008).
Size	Egan et al. (2001), McEachern and Schroder (2002).
Competitive price	Egan et al. (2001), McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Liu et al. (2006), Ahmed (2008), Brunton (2009).
Value for money	Liu et al. (2006), Brunton (2009).
Available as individual parts	Hsu and Chang (2002), Kennedy et al. (2004), Krystallis and Arvanitoyannis (2006).
Prepacked	Egan et al. (2001), McEachern and Schroder (2002).

Free from chemical/growth promotants	McEachern and Schroder (2002), McCluskey et al. (2005), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), Brunton (2009).
Free from antibiotics	Hoffmann (2000), McEachern and Schroder (2002), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Brunton (2009).
Raised in a humane way	Wandel and Bugge (1997), McEachern and Schroder (2002), Blokhuis et al. (2003), Brunton (2009).
Grown on local farms	McEachern and Schroder (2002).
Organically grown	McEachern and Schroder (2002).
Marbling	Egan et al. (2001), Killinger et al. (2004).
Leanness	Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006).
Label/brand	McEachern and Schroder (2002), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Sepulveda et al. (2008).

The next step required respondents to link the criteria they most often utilised in their decision to purchase fresh/chilled meat with a total of eight desired outcomes. According to McEachern and Schroder (2002), upon examining the factors which most influenced the consumers' decision to purchase fresh/chilled meat, it may be possible to link these factors to specific value systems or attitudes.

Desired outcomes	**Sources**
The food has a good taste	Egan et al. (2001), McEachern and Schroder (2002), McCarthy et al. (2003).
The food is safe to eat	McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Liu et al. (2006).
The food is healthy and nutritious	Brug et al. (1995), McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Liu et al. (2006), Brunton (2009).
The food represents value for money	McCarthy and O'Reilly (1999), McCarthy et al. (2003), Brunton (2009).
The food has good texture/mouth feel	Egan et al. (2001), Liu et al. (2006), Brunton (2009).
The food had been produced in a way that is good for the environment	McGlone (2001), McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Ahmad and Juhdi (2008).
The food has been produced in a way that protects worker welfare	Frisvold et al. (1988), McGlone (2001), Bonne and Verbeke (2006).
The food is guaranteed Halal	Pointing and Teinaz (2004), Bonne and Verbeke (2006), Ahmed (2008).

On a scale of 1 to 6 where 1 was "not at all important" and 6 was "very important", respondents were required to rank the importance of each desired value in their

decision to purchase fresh/chilled meat from a retail store. Krystallis and Arvanitoyannis (2006) suggest that consumers concerns for food safety will have a significant impact on the overall purchase of fresh/chilled meat.

Respondents were then asked to rate their overall level of dissatisfaction with the quality of the fresh/chilled meat they had purchased. A seven point ordinal scale was utilised for this group of questions, where 1 was "never" and 7 was "every time". Umberger et al. (2000) revealed that some consumers were concerned with health matters, while others were concerned about the quality or the purchase of meat which delivered greater value for money. Any dissatisfaction caused by these elements will influence the consumers' subsequent purchasing decisions for fresh/chilled meat (Goodson et al. 2002). To conclude, respondents were asked in an open-ended question to identify the main reasons for their dissatisfaction.

What are the main reasons for your dissatisfaction with the quality of the [type of fresh/chilled meat] you have purchased? (Umberger et al. 2000, Egan et al. 2001, Bernues et al. 2003)

Section 2a, 2b and 2c: Fresh fruit and vegetable questionnaire

The ordering of Section Two for the fresh fruit and vegetables survey was as follows: investigating consumers purchasing behaviour for fresh potatoes (2a), followed by spinach (2b) and apples (2c). An option was provided for respondents to proceed to the next sub-section if they did not purchase a particular commodity. A total of seven questions were asked of respondents in each sub-section. The first question was designed to collect information from the respondents on the frequency of purchase.

Thinking specifically about [type of crop], how often do you purchase them? (Zikhan et al. 1999, Ragaert et al. 2004, Bingham et al. 2005, Tam 2006, Yoo et al. 2006, McKinna et al. 2007)
[Multiple responses: Daily; 2-3 times per week; Once a week; Once every 2 weeks; Once a month; Others (please specify)] (Categories were based on results of preliminary research)

Respondents were then asked to respond to an open-ended question for each commodity to identify the variables they used in their decision to purchase.

What criteria do you use in your decision to purchase fresh [type of crop] from retail outlets? (von Alvensleben and Meier 1990, Lai et al. 1998, Baker 1999, Peneau et al. 2006, Slosser 2006, Jemison et al. 2008, Batt 2009, Concepcion 2009)

Respondents were then asked to rank how important a number of variables were in their decision to purchase fresh produce on a 6-point scale where 1 was "not at all important" and 6 was "very important". While a number of criteria were common to each commodity, specific questions on different attributes were added where they were relevant to the target product.

Common criteria	**Sources**
Colour	Beharrell and MacFie (1991), Berdegue et al. (2003), Batt 2004, Ragaert et al. (2004).
Freshness	Ekelund (1990), Yiridoe et al. (2005), McKinna et al. (2007), Batt (2009).
Country-of-origin	Beharrell and MacFie (1991), McKinna et al. (2007).
Competitive price	Arope (1992), Ekelund (1990), Baker (1999), Harker (2001), Batt (2004).
Variety	Arope (1992), Hendrickson et al. (2006), McKinna et al. (2007).
Freedom from pests and diseases	Arope (1992), Baker (1999), Batt (2009), Fernqvist and Ekelund (2009).
Freedom from chemical residues	Ekelund (1990), Beharrell and MacFie (1991), Baker (1999), Caswell (2000), McKinna et al. (2007).
Firmness	Jaegar et al. (1998), Berdegue et al. (2003), Batt (2009).
Size	Caswell (2000), Berdegue et al. (2003), Batt (2004).
Value for money	Caswell (2000), Batt (2009).
Label/brand	Beharrell and MacFie (1991), Caswell (2000), Batt (2009), Fernqvist and Ekelund (2009).
Availability of product information in-store	McKinna et al. (2007), Batt (2009).
Newspapers advertising/catalogues	Baker (1999), Pollard et al. (2002), Boynton-Jarrett et al. (2003), Batt (2009).
Prepacked	Jaeger et al. (2001), Pollard et al. (2002), Fernqvist and Ekelund (2009), Batt (2009).
Organic	Ekelund (1990), Beharrell and MacFie (1991), Yiridoe et al. (2005), McKinna et al. (2007).
Favourable prior purchase	Ekelund (1990), Batt (2009).
Locally grown	Ekelund (1990).

Additional criteria for potatoes were mainly derived from Batt (2009).

Criteria	Sources
Washed	Batt (2009).
Intended use	Pavlista (1997), Batt (2009).
Free from soil	Fernqvist and Ekelund (2009).
Flesh colour	Pavlista (1997), Batt (2009).
Depth of eyes	Batt (2009).
Freedom from sprouting	Batt (2009).
Tuber shape	Pavlista (1997), Batt (2009).
Advice from sales assistant	Batt (2009).
Place of purchase	Conception (2009).

There was a paucity of literature on the factors which were thought to most influence consumers in their decision to purchase fresh spinach. The research on consumer preferences and attitudes for purchasing spinach were commonly aggregated with other types of vegetables such as cabbage, broccoli and cauliflower (Figuie 2003; Bingham et al. 2005; Concepcion 2009) or as a group of variables associated with an analysis of organic product (Dettman and Dimitri 2007; Aryal et al. 2009). The additional criteria thought to be important in the respondents decision to purchase spinach were mainly derived from Slosser (2006) and data collected from the preliminary research.

Criteria	Sources
Leaves	Slosser (2006).
Freedom from blemish and bruise	Slosser (2006).
Free from soil	Slosser (2006), preliminary research.
Free from wilting	Slosser (2006).
Spinach is sold loose	Preliminary research.
Spinach is tied in bunches	Slosser (2006).
Stem removed	Slosser (2006), preliminary research.

On the other hand, a number of studies on consumer preferences for fresh apples were located.

Criteria	Sources
Shape	Armbruster (1990), McCracken et al. (1994), Novotorova and Mazzocco (2008).
Freedom from blemish and bruise	Armbruster (1990), Jaeger et al. (1998), Bett et al. (2001), Batt (2004), Mehinagic et al. (2006), Novotorova and Mazzocco (2008).
Waxed	Bett et al. (2001).
In-store tastings	Ricks et al. (2002).

After respondents had identified and ranked the importance of the criteria they utilised in their decision to purchase fresh fruit and vegetables, the next step was to determine which attributes were related to each of the desired outcomes. Yiridoe et al. (2005) identified eight broad groups of food quality attributes; food safety, human health, environmental effects and animal welfare, visual appeal, nutritional value, taste and freshness. Other additional attributes identified by Caswell (2000) were value, packaging and the production process. For this research, a total of eight desired outcomes or values were utilised.

Desired outcomes	Sources
The food has a good taste	Ekelund (1990), Beharrell and MacFie (1991), Arope (1992), Harker (2001), Yiridoe et al. (2005).
The food is safe to eat	Schifferstein and Oude Ophuis (1998), Baker (1999), Caswell (2000).
The food is healthy and nutritious	Ekelund (1990), Beharrell and MacFie (1991), Arope (1992), Caswell (2000), Harker (2001), Yiridoe et al. (2005).
The food represents value for money	Caswell (2000).
The food has good texture/mouth feel	Abbott (1999), Harker (2001), Shewfelt (2006).
The food had been produced in a way that is good for the environment	Ekelund (1989), von Alvensleben and Meier (1990), Beharrell and MacFie (1991), Grunert and Juhl (1995), Yiridoe et al. (2005).
The food has been produced in a way that protects worker welfare	Beharrell and MacFie (1991), Arope (1992), Wandel and Bugge (1997), Caswell (2000).
The food is guaranteed Halal	Chaudry et al. (1997).

For Muslims, the consumption of any fresh fruit and vegetables are considered to be Halal (Chaudry et al. 1997). However, the researcher found it both necessary and desirable to investigate the attributes used by consumers to assure themselves that the fresh fruit and vegetables purchased were guaranteed Halal.

Respondents were then asked to rank how important each of the desired outcomes were in their decision to purchase fresh fruit and vegetables. A scale of 1 to 6 was used for this question, where 1 was “not at all important” and 6 was “very important”.

Having identified what criteria respondents used to evaluate the quality of the fresh fruit and vegetables available for sale, respondents were then asked to evaluate the extent to which they were satisfied/dissatisfied with the purchase they had made. Sloof et al. (1996) suggested three phases consumers might experience; an increase in liking for the product, no preference or a decline in liking. On a scale of 1 to 7, where 1 was "never" and 7 was "every time", respondents were asked to evaluate the frequency with which they were dissatisfied with the quality of the products they had purchased and the reasons for their dissatisfaction.

Sloof et al. (1996) added that in the appreciation stage, comparative weights were assigned by consumers to each individual quality cue or combination between quality cues and quality attributes. These weights were based upon the experience of consuming the product. According to Batt (2004), consumers are satisfied whenever performance exceeds expectations, while they will become dissatisfied whenever performance falls below expectations. For instance, the physical attributes of the product are commonly used by consumers when selecting their fresh produce in a retail store. Batt (2004), however confirmed that the physical attributes were poor indicators of quality, thus leading consumers to often feel dissatisfied with their purchase.

What are the main reasons for your dissatisfaction with the quality of the [type of crop] you have purchased? (Sloof et al. 1996, Adebanjo 2001, Batt 2004)

Section 3: Dissatisfaction and food safety issues

Questions in Section Three were similar for both surveys. The first question in this section sought to understand how Malaysian consumers respond when they are dissatisfied with the quality of the fresh/chilled meat or fresh fruit and vegetables that they have purchased. According to Liu and McClure (2001), non-western customers behave differently from western customers when they are dissatisfied. Unlike Westerners, Malaysian consumers were found not to complain to retailers, but rather to take private action such as switching to another brand, purchasing from another shop or spreading negative word-of-mouth to their family or friends when

they were dissatisfied (Ramayah et al. 2003; Ndubisi and Ling 2005). Asma (1996) also revealed that Malaysian consumers seldom expressed their dissatisfaction directly. Producers and retailers in the fresh food industry may therefore be misled by situations where there is a low degree of dissatisfaction or few complaints from consumers.

Product attributes were found to be linked to consumers' complaint behaviour (Rousseau 1987; Ramayah et al. 2003). Rousseau (1987) examined consumers' complaint behaviour towards the purchase of different types of products such as household appliances and audio/visual equipment, clothing and jewellery, food products, furniture, motor vehicle accessories and parts, and books and magazines. The findings indicate that when consumers were dissatisfied, their behaviour was influenced by the price of the product, functionality and product enjoyment.

When you are dissatisfied with the quality of [fresh/chilled meat or fresh fruit and vegetables] you have purchased, what do you do? (Eastwood et al. 1987)	
I am always satisfied with my purchase	Galbreath and Rogers (1999), Ndubisi and Ling (2005), preliminary research.
I throw them out	Bonne and Verbeke (2006).
I change shops	Rousseau (1987), Galbreath and Rogers (1999), Liu and McClure (2001), Ndubisi and Ling (2005).
I inform/complain to the seller	Rousseau (1987), Ramayah et al. (2003), Ndubisi and Ling (2005).
I return it to the shop	Liu and McClure (2001).
I just eat it/cook it	Preliminary research.
I stop buying	Colgate and Hedge (2001), Ramayah et al. (2003).
I am more selective the next time I buy	Ramayah et al. (2003).
I purchase less	Segerson (1998).
I do nothing	Ramayah et al. (2003), Ndubisi and Ling (2005).
I change brands	Rousseau (1987), Colgate and Hedge (2001), Liu and McClure (2001), Ramayah et al. (2003).

The following questions in Section Three revolved around food safety issues. Firstly, respondents were asked to rank their level of confidence in their purchase of fresh/chilled meat or fresh fruit and vegetables on a scale from 1 to 6, where 1 was

"not at all confident" and 6 was "very confident". Following this question, an open-ended question asked respondents to justify the reasons for their ranking.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
How confident are you that the fresh/chilled meat that you consume are safe to eat? According to your response in Question 32, what factors lead you to conclude that the fresh/chilled meat that you buy are safe or not safe to eat? (Becker et al. 2000, Hoffmann 2000, Krystallis and Arvanitoyannis 2006)	How confident are you that the fresh fruit and vegetables that you consume are safe to eat? According to your response in Question 35, what factors lead you to conclude that the fresh fruit and vegetables that you buy are safe or not safe to eat? (Schifferstein and Oude Ophuis 1998)

In purchasing fresh food, food safety has been identified as a major consideration (Asp 1999). According to Batt et al. (2006), in Asia, food safety was considered to be the most important variable in meeting consumers' demand. Factors such as microbiological contamination, chemical residues from growth hormones and antibiotics, high fat content and BSE were of great concern for consumers in their decision to purchase fresh/chilled meat (Asp 1999; Krystallis and Arvanitoyannis 2006). In a Muslim country such as Malaysia, Halal certification or the consumers' confidence that the product was Halal was considered crucial in the consumers' decision to purchase fresh/chilled meat (Bonne and Verbeke 2006).

For fresh fruit and vegetables, consumers may have concerns about contamination by pathogenic microorganisms, the origin of the product, genetic modification and the usage of chemicals and fertilisers in the cultivation of the crop. Other concerns about sustainable production, water pollution, animal welfare and waste management were mentioned in order to investigate how confident respondents' were of the Malaysian government's capacity to manage these issues. Respondents were asked to respond on a six point scale where 1 was "not at all confident" and 6 was "very confident".

How confident are you of the Malaysian food system in terms of managing each of the following, where 1 is “not at all confident” and 6 is “very confident”.	
Organically produced food	McEachern and Schroder (2002).
Genetically modified fruit and vegetables	Caswell (2000), Novotorova and Mazzocco (2008).
Chemical residues	McEachern and Schroder (2002).
Fair trade	McEachern and Schroder (2002), Batt et al. (2006).
Sustainable production	McEachern and Schroder (2002), Batt et al. (2006).
Country-of-origin	McEachern and Schroder (2002).
Water pollution	McEachern and Schroder (2002), Said et al. (2003), Batt et al. (2006).
Waste management	Said et al. (2003), Batt et al. (2006).
Conservation biodiversity	McEachern and Schroder (2002).
Animal welfare	Hughes (1995), Harper and Makatouni (2002), McEachern and Schroder (2002), Batt et al. (2006), Bonne and Verbeke (2006), Yiridoe et al. (2005).
Recycling packaging	McEachern and Schroder (2002), Batt et al. (2006).
Halal	Bonne and Verbeke (2006), Chaudry et al. (2007).
Hormones, antibiotics and growth promotants	McEachern and Schroder (2002).
Functional food/probiotics	Verbeke (2005a), Batt et al. (2006).
Microbial contamination	Asp (1999), Batt et al. (2006).

The final two questions in Section Three examined respondents’ experience in avoiding or boycotting a particular food product. Ramayah et al. (2003) revealed that Malaysian consumers tend to boycott a product when they received poor service from retailers or the products failed to meet quality expectations. Klein et al. (2001) demonstrated that people have different and mixed motives for boycotting a product. Segerson (1998) confirmed that the main reason for consumer boycotts was food safety.

Have you ever avoided or boycotted a particular food product because you were concerned about food safety? Is your boycott usually on a temporary basis or permanent? What are the reasons for your boycott? (Segerson 1998, Klein et al. 2001, Ramayah et al. 2003, Klein et al. 2004, Tyran and Engelmann 2005)

Part 4: Socio-demographic factors

The importance of socio-demographic factors as determinants for the purchase of fresh/chilled meat and fresh fruit and vegetables was presented in Part Four. In the

purchase of fresh/chilled meat, older consumers were believed to be more interested in the origin of the meat, whereas younger shoppers, placed greater importance on taste. High income earners demanded more information on the label of packaged meat compared to consumers earning a lower income (Krystallis and Arvanitoyannis 2006). Bonne and Verbeke (2006) demonstrated how women attached greater importance to the method of slaughter than men.

Zenk et al. (2005) demonstrated that correlations existed between socio-demographic characteristics such as income, education level and age and the quality of fresh produce purchased by consumers. Furthermore, family size and the presence of children in the household were found to have influenced consumers decision to purchase fresh/chilled meat or fresh fruit and vegetables from a retail store (Bernues et al. 2003; Bonne and Verbeke 2006; McKinna et al. 2007).

Another reason for collecting socio-demographic variables was for the purpose of segmenting the market. Beside socio-demographics, markets can also be segmented by utilising patterns of usage and consumer preferences (Marcus 1998; Hsu and Chang 2002). In this research, the market was segmented primarily on the basis of identifying respondents' preference to shop at either modern retail outlets or traditional markets when purchasing their fresh/chilled meat or fresh fruit and vegetables.

Socio-demographic characteristics:

1. Gender
2. Age
3. Marital status
4. Including yourself, how many people live in your household?
5. Do you have any children under 18 living in your household?
6. How many?
7. Education level
8. Occupation
9. Your monthly income
10. Ethnicity
11. Your postcode area?

(Bernues et al. 2003, Zenk et al. 2005, Krystallis and Arvanitoyannis 2006, McKinna et al. 2007, Skallerud et al. 2009)

Socio-demographic information from the respondents was also collected with the intention of facilitating a comparison with the national population census. This would enable the researcher to measure how well the sample represented the general population within Malaysia. The Population and Housing Censuses of Malaysia for the year 2000 and the Population Profile by Parliament and State Legislative Assembly Areas Malaysia, both published by the Department of Statistics Malaysia, were the two main sources utilised in this research to accommodate this analysis.

Socio-demographic variables were collected to facilitate a comparison with other research projects in Malaysia that explored consumers purchasing behaviour towards various types of food products. Sidin et al. (2004) found that gender played an important role in the decision making of a household when purchasing food or eating out. Sidin et al. (2004) also demonstrated how other family members may initiate or contribute information about the place of purchase or which brand to buy. Ahmad and Juhdi (2008) gathered demographic information from their respondents in order to investigate the consumers' attitudes towards organic food products in Malaysia. Quah and Tan (2010) demonstrated that although socio-demographic variables were important determinants for the purchasing of organic food products, the effects were different for different ethnic groups in Malaysia.

7.5 Translation procedure and pilot testing the questionnaire

The original questionnaires for both surveys were drafted in English. However, given the multicultural nature of the Malaysian respondents and the knowledge that not all respondents were capable of comprehending the English language well, it was decided that the questionnaire should be prepared in two versions; Malay and English. The original English version of the survey was translated into the Malay language using the back-to-back translation method (Malhotra and Birks 1999). The translation procedure was carried out by two lecturers from the Institute of International Languages, Multimedia University, Malaysia.

No conceptual differences were found in the translated versions of the survey. Subsequently, two pilot test sessions were performed to determine the effectiveness

of the survey instrument. Firstly, a pilot test was conducted among Malaysians who resided in a variety of suburbs in Perth, Western Australia. A pilot test was also administered through email among friends and relatives who lived in Malaysia. A total of 40 respondents participated in both pilot tests. The majority of respondents had no difficulties in understanding the questions presented in the survey. Suggestions from the respondents mainly revolved around the length of the survey. Although the pilot test identified no major complications, amendments were made to the survey instrument according to the feedback received.

7.6 Data collection

The fieldwork was carried out from December 2008 until February 2009. Two postgraduate students were appointed and trained as research assistants in order to assist the researcher in the data collection process. Both students were briefed thoroughly by the researcher to ensure that they really understood all questions and statements in the survey forms. They were also trained how to approach potential respondents.

At the beginning of the interview, respondents were asked three qualifying questions;

(1) “are you Malaysian and residing in the Klang Valley region?”. If the answer was yes, the interviewer proceeded the next question. If the answer was no, the interviewer thanked the respondent and concluded the interview.

(2) “in your household, are you personally involved in the decision to purchase fresh/chilled meat or fresh fruit and vegetables?”. If the answer was yes, respondents were allowed to proceed to the next question. If the answer was no, the interviewer thanked the respondent and the interview was terminated.

(3) “this survey will take approximately 20 minutes to complete. Do you have time to complete this survey?”. If the answer was yes, respondents were eligible to participate in the survey. However, if respondents answered no, the interviewer thanked the respondent and concluded the interview.

Following respondents agreement to participate in the study, respondents were asked to choose their preferred language when responding to the survey.

Respondents who wished to answer in the Malay language were then presented with a copy of the survey in Malay or vice versa.

Respondents were also advised that their participation was entirely voluntary; that all information gathered would be kept strictly confidential; that the study was being conducted solely for academic purposes; and that the study had been approved by the Curtin University of Technology Ethics Committee.

7.7 Data analysis techniques

Before entering the data into the Statistical Package for Social Sciences (SPSS) program, each open-ended question was encoded. According to Malhotra et al. (2008), category codes should be mutually exclusive. Responses that had a similar meaning were collectively grouped into the same code. Two SPSS data files were created: one for the fresh/chilled meat survey and one for the fresh fruit and vegetable survey.

Upon completion, the two SPSS data files were screened. The data files went through an extensive check for consistency, normality of the data and to identify any missing responses using frequency distributions, means and standard deviation. Once the data files were cleaned, the researcher sought assistance from Curtin University of Technology's SPSS advisor, for analysis.

7.7.1 Univariate data analysis

Univariate data analysis was widely used in this study. According to Field (2009), the main objective of univariate data analysis is to describe or summarise the distribution of each individual variable. The types of univariate analyses utilised in this study included descriptive analysis, cross-tabulations, independent t-test, one-way analysis of variance (ANOVA) and non-parametric tests.

Descriptive analysis

Descriptive analysis were used to describe the frequency with which respondents purchased the different types of fresh food, the store choice, variables respondents

used in making their decision to purchase fresh food, the correlation between the various criteria respondents utilised in their decision to purchase the types of fresh food, the desired values, reasons for dissatisfaction with the purchase of each type of fresh food and motives for boycotting a particular food product. The socio-demographic characteristics of the respondents were also examined using descriptive analysis.

Additionally, statistical analysis were used as measures of location (mode and median) in order to determine those occasions where respondents felt unhappy with the quality of the fresh food they had purchased.

Cross-tabulations

A cross-tabulation is a statistical technique that describes two or more variables simultaneously (Malhotra et al. 2008). As mentioned by David and Sutton (2004), cross-tabulation is a technique used to describe and explore the relationships between categorical (nominal or ordinal) variables. David and Sutton (2004) added that cross-tabulations allow for more detailed exploration of the responses between different sub-groups and the exploration of hypotheses in the relationships between variables. Cross-tabulations describe how one variable relates to another. In this study, cross-tabulations were employed to identify any relationship between the clusters identified and the place of purchase. Pearson chi-square is the mathematical procedure used to determine any statistical significance among the variables.

Independent samples t-test

The independent t-test was used to assess whether the two means collected from independent samples differed significantly (Field 2009). In this study, an independent t-test was applied to identify any significant difference in respondents' choice of retail store and the clusters.

One-way analysis of variance (ANOVA)

The analysis of variance (ANOVA) was used to test whether there was any significant difference in the means between three or more discriminate variables (Malhotra et al. 2008; Field 2009). Following a statistically significant omnibus F-

test in one-way ANOVA, a series of post-hoc tests using Scheffe's test and Tukey's HSD were conducted to identify how the means differed from each other.

Non-parametric tests

These involve statistical procedures that do not rely on the restrictive assumptions of parametric tests (Field 2009). Given that parametric tests (t-test and ANOVA) make assumptions about the population from which the sample has been drawn, non-parametric tests do not have stringent requirements and do not make assumptions about the underlying population distribution (Pallant 2001). According to Malhotra et al. (2008), non-parametric tests are appropriate for testing variables from one sample, two independent samples or two related samples. In this study, a non-parametric test was applied to identify any significant differences between the two different data sets (fresh/chilled meat and fresh fruit and vegetables).

7.7.2 Multivariate data analysis

Multivariate analysis is designed to look at several dependent and independent variables simultaneously (Hair et al. 1998; Field 2009). In this study, factor analysis and cluster analysis were used as multivariate techniques to analyse the data sets.

Factor analysis (Principal component analysis)

Factor analysis is a technique for identifying groups of variables (Field 2009). More importantly, factor analysis is used to reduce a dataset to a much smaller number of variables which is more manageable while retaining as much of the information as possible (Hair et al. 1998; Field 2009).

There are two types of factor analysis; confirmatory and exploratory. Confirmatory factor analysis is used to test a hypothesis from a previous theoretical model created from past research. In exploratory factor analysis, the process of grouping the variables in not determined by a prior hypothesis. Exploratory factor analysis was used in this research.

The steps in factor analysis included:

(1) examination of the correlation matrix. This involved an examination of the coefficient, significance levels, determinant of the *R*-matrix, and KMO and Bartletts's Test of Sphericity.
(2) factor extraction. In this study, principal component analysis was used to identify the factors. Only those factors with an Eigenvalue equal to or greater than 1.0 were considered.
(3) factor rotation maximises the loading of each variable on one of the extracted factors while minimising its loading on all other factors (Field 2009). Varimax rotation was chosen for the analysis.
(4) interpretation of factors. Hair et al. (1998) and Field (2009) suggest that only those variables with a factor loading of 0.4 and above should be retained. The factors were then labelled accordingly (Hair et al. 1998).
(5) Reliability analysis was conducted upon the completion of the factor analysis. Cronbach's alpha is the most common measure of scale reliability (Field 2006). A Cronbach's alpha value of 0.7 and above is acceptable.

In this study, principal component analysis was undertaken to identify the factors influencing the respondents' choice of preferred retail outlet, the factors influencing the quality of either fresh/chilled meat or fresh fruit and vegetables, and the factors influencing the respondents' decision to purchase each commodity (chicken and beef, or potatoes, spinach and apples).

Cluster analysis

Cluster analysis is a method for grouping cases based on their similarities on multiple measures (Field 2000). Fifield (2007) mentioned that cluster analysis creates 'clusters' by putting respondents into groups that are as alike as possible (homogeneous) within the cluster and as different as possible (heterogeneous) between the clusters.

Past researchers have commonly used socio-demographic variables such as gender, age and income to segment markets according to consumer preferences in their purchase of fresh food (Thompson 1998; Robinson and Smith 2002; Bernues et al. 2003; Zenk et al. 2005; Krystallis and Arvanitoyannis 2006; McKinna et al. 2007; Skallerud et al. 2009). However in this study, the researcher discovered limitations

in utilising socio-demographics to segment the respondents. One of the reasons for this was consumers with similar socio-demographic backgrounds do not necessarily observe the same purchasing pattern when buying fresh food from a retail store. Shewfelt (2006) demonstrated that in a number of instances, consumers had been segmented according to their product preferences rather than socio-demographic profiles. Malundo (1996) [cited in Shewfelt 2006] segmented peach consumers into categories such as 'sweet and juicy', 'tastes like a peach' and 'tart and crunchy'. West (2000) [cited in Shewfelt 2006] segmented fresh tomato consumers according to their flavour preferences such as 'vine-ripened', 'sweet', 'tart/sour' and 'not bland'.

Cluster analysis was undertaken in order to identify groups of consumers which preferred to purchase their fresh/chilled meat or fresh fruit and vegetables from either a modern retail outlet, traditional markets or from both retail outlets. Each cluster identified was anticipated to respond differently to the variables that may influence their decision to purchase fresh food from different retail stores. The final cluster solution was saved and utilised to identify any significant differences between clusters. Different groups were identified for both surveys.

7.8 Chapter summary and implications

This chapter has described the methodological approach taken in order to achieve the objectives of this research study. A comprehensive review of the literature on consumers' attitudes, beliefs, preferences for food quality, and their store choice behaviour was required to develop the research instruments that were then utilised in the data collection process. Procedures for the collection of data were also discussed.

The researcher encountered several difficulties in the early stages and while the fieldwork was in progress. Firstly, the researcher received only limited financial assistance. The fieldwork activities included a lot of travelling from one place to another, the payment of research assistants (2), 600 photocopies of questionnaires and tokens of appreciation to respondents for their participation.

Regrettably, the researcher received little cooperation from modern retailers to conduct the survey on their premises. Prior to conducting the fieldwork, the researcher sought approval to undertake the survey in shopping malls, but permission was not granted. Only one modern retailer agreed to participate in the research with two conditions; (1) the questionnaires and findings of the research must be reported to them for approval; and (2) payment was involved to rent space in the shopping mall. Due to financial constraints, the researcher was unable to accept this offer.

Due to the large size of the research instruments, time was an impediment. On several occasions, potential respondents indicated their interest to participate in the research, but many of them had to withdraw part way through the questionnaire as; (1) the survey was too long; (2) they were in a rush to go home to cook or needed to go back to the office; (3) they were feeling tired; or (4) accompanying children were starting to get restless.

During the administration of the surveys, the researcher observed different attitudes among ethnic groups towards the research. Generally, the Malay respondents were the most cooperative group to participate in this research. Although the English version of the survey was prepared to attract more respondents from other ethnic groups, the responses from this group remained low.

8. Descriptive results of survey respondents

8.1 Chapter Outline

Chapter Eight describes the respondents who participated in the quantitative study. Part One describes those respondents who participated in the fresh/chilled meat survey, whereas Part Two describes the respondents in the fresh fruit and vegetables survey. Part Three compares the two data sets. The chapter concludes with Part Four, which validates the sample by comparing both data sets with other research involving Malaysian consumers and data from the Malaysian Department of Statistics.

8.2 Part One: Profile of respondents who purchased fresh/chilled meat

In the Klang Valley, more females (85.8%) were responsible for purchasing fresh/chilled meat for household consumption compared to males (Table 8.1).

Table 8.1: Gender of respondents

	N	%
Male	37	14.2
Female	223	85.8
	260	100.0

More than one half of the respondents (56.2%) were aged between 26 to 34 years old (Table 8.2).

Table 8.2: Age of respondents

	N	%
18-25 years old	32	12.3
26-34 years old	146	56.2
35-44 years old	47	18.1
45-54 years old	20	7.7
55-64 years old	12	4.6
65 and above	3	1.2
	260	100.0

The next largest age group was between the ages of 35 to 44 years old (18.1%), followed by those respondents aged between 18 to 25 years old (12.3%). A total of 20 respondents (7.7%) were aged between 45 to 54 years old, while 4.6% of the respondents were between the ages of 55 to 64 years old. The most elderly group, those aged 65 years and above, comprised only 1.2%.

The majority of respondents (78.8%) reported that they were married (Table 8.3).

Table 8.3: Marital status of respondents

	N	%
Single	49	18.8
Married	205	78.8
Divorced/widowed	4	1.5
Others	2	0.8
	260	100.0

Some 18.8% of respondents were single, while 1.5% of respondents were divorced or widowed.

The majority of the respondents households (64.4%) had between three to five occupants (Table 8.4).

Table 8.4: The number of people living in respondents household

	N	%
1	9	3.6
2	36	14.2
3	54	21.3
4	58	22.9
5	51	20.2
6	22	8.7
7	8	3.2
8	15	5.9
	253	100.0

For some 14.2% of respondents, there were at least two people living in the same household. Some 8.7% of respondents were living together with six other people,

while 5.9% of respondents had eight people living in the same house. Only 3.6% of the respondents lived alone.

Respondents were asked to provide further information about the number of children under the age of 18 who were living in the same household. More than half of the respondents (63.7%) had at least one child who was under the age of 18 years living in the same household (Table 8.5).

Table 8.5: Do you have any children under 18 living in your household

	N	%
Yes	163	63.7
No	93	36.3
	256	100.0

For those respondents who had at least one child under the age of 18 residing in the same household, some 59.3% of respondents had at least one child who was aged less than 5 years old living in the household (Table 8.6).

Table 8.6: Numbers of children under 18 living in respondents household

	Numbers of children				N	%
	1	2	3	4		
Children aged less than 5 years old	77	37	9	1	124	59.3
Children aged between 6-12 years old	27	21	6		54	25.8
Teenagers aged between 13-17 years old	21	5	5		31	14.8
					209	

Some 25.8% of respondents had at least one child aged between 6 to 12 years old living in the same house, and 14.8% of respondents had at least one teenager aged between 13 to 17 years old residing in the same house.

The largest percent of respondents possessed either an undergraduate degree or a professional certificate (39.6%) (Table 8.7).

Table 8.7: Education level of respondents

	N	%
Primary school	1	0.4
Secondary school	41	15.8
Diploma	61	23.5
First degree/professional certificate	103	39.6
Postgraduate	54	20.8
	260	100.0

A total of 61 respondents (23.5%) held college diplomas, while 20.8% of respondents had completed a postgraduate degree. Some 15.8% of respondents had completed high school. Only one respondent had not attended secondary school.

While the respondents were engaged in a great diversity of occupational groups, some 12.2% of the respondents were clerical workers (Table 8.8).

A further 10.9% of respondents were executives or housewives respectively, while 9.0% of respondents were government employees.

Some 6.3% of respondents were students, while 5.5% of respondents were academics. A total of 3.9% of respondents were employed as entrepreneurs, research assistants or secretaries, respectively.

Table 8.8: Occupations of respondents

	N	%
Accountant	5	1.9
Academics	14	5.5
Administrative officer	1	0.4
Assistant manager	3	1.2
Audiologist	1	0.4
Auditor	2	0.8
Bank executive	7	2.8
Chemist	1	0.4
Cleaner	2	0.8
Clerk	31	12.2
Consultant	3	1.2
Database management officer	2	0.8
Engineer	9	3.5
Entrepreneur	10	3.9
Executive	28	10.9
Financial advisor	1	0.4
Government officer	23	9.0
Graphic designer	2	0.8
Human resource executive	3	1.2
Housewife	28	10.9
Lawyer	1	0.4
Manager	5	1.9
Marketer	5	1.9
Microbiologist	1	0.4
Nurse	1	0.4
Pensioner	8	3.1
Programmer	6	2.4
Quantity surveyor	2	0.8
Research assistant	10	3.9
Secretary	10	3.9
Soldier	1	0.4
Student	16	6.3
Teacher	8	3.1
Technician	5	1.9
	255	

The largest group of respondents (23.5%) had a monthly household income between RM3,001 to RM4,500 (Table 8.9).

Some 19.2% of respondents reported a monthly income between RM1,501 to RM3000, while 16.9% of respondents indicated that their monthly income was between RM4,501 to RM6,000. Some 13.5% of respondents had a monthly

household income less than RM1,500, while 11.9% had a total monthly household income of more than RM9,001.

Table 8.9: Monthly income of respondents

	N	%
Less than RM1,500	35	13.5
RM1,501-RM3,000	50	19.2
RM3,001-RM4,500	61	23.5
RM4,501-RM6,000	44	16.9
RM6,001-RM7,500	27	10.4
RM7,501-RM9,000	12	4.6
RM9,001 and above	31	11.9
	260	100.0

The majority of respondents (93.5%) were Malay (Table 8.10).

Table 8.10: Ethnicity of respondents

	N	%
Malay	243	93.5
Chinese	7	2.7
Indians	2	0.8
Others	8	3.1
	260	100.0

Some 3.1% of respondents indicated that they were from various ethnic groups located on the east coast of Malaysia, mainly from Sabah and Sarawak. Chinese made up 2.7% of the sample, while Indians (0.8%) comprised the smallest group.

The sample distribution showed that the largest group of respondents resided in the area of Bandar Baru Bangi (17.4%), followed by Kajang (16.7%) and Kuala Lumpur (13.9%) (Table 8.11).

Other respondents were from the area of Puchong (5.8%), Putrajaya (5.0%), Ampang (5.0%) and Shah Alam (4.7%).

Table 8.11: Respondents postcode area

Postcode	Area	N	%
40000-40470	Shah Alam	12	4.7
41200-41250	Klang	6	2.3
42300	Bandar Puncak Alam	1	0.4
42600	Jenjarom	1	0.4
42700	Banting	1	0.4
43000-43009	Kajang	43	16.7
43200	Cheras	2	0.8
43300	Seri Kembangan	14	5.4
43400	Serdang	8	3.1
43500	Semenyih	2	0.8
43600	Bangi	4	1.6
43650	Bandar Baru Bangi	45	17.4
43700	Beranang	1	0.4
43800	Dengkil	1	0.4
43900	Sepang	7	2.7
45100	Sungai Ayer Tawar	2	0.8
45600	Batang Berjuntai	1	0.4
47000	Sungai Buloh	1	0.4
47100-47180	Puchong	15	5.8
47300-47830	Petaling Jaya	9	3.5
47500-47650	Subang Jaya	7	2.7
48000-48020	Rawang	4	1.6
50200-59200	Kuala Lumpur	36	13.9
62000-62652	Putrajaya	13	5.0
63000	Cyberjaya	2	0.8
64000	KLIA	2	0.8
68000	Ampang	13	5.0
68100	Batu Caves	5	1.9
		258	

8.3 Part Two: Profile of respondents who purchased fresh fruit and vegetables

Again, it was noted that more females (79.6%) were responsible for the purchase of fresh fruit and vegetables in the household compared to males (20.4%) (Table 8.12).

Table 8.12: Gender of respondents

	N	%
Male	58	20.4
Female	226	79.6
	284	100.0

The majority of respondents (50.7%), were aged between 26 to 34 years old (Table 8.13).

Table 8.13: Age of respondents

	N	%
18-25 years old	40	14.1
26-34 years old	144	50.7
35-44 years old	51	18.0
45-54 years old	37	13.0
55-64 years old	12	4.2
65 and above	0	0.0
	284	100.0

Some 18.0% of respondents were aged between 35 to 44 years old, 14.1% were aged between 18 to 25 years and 13.0% were aged between 45 to 54 years. No respondents over the age of 65 participated in the fresh fruit and vegetable purchasing survey.

The majority of respondents (72.2%) were married (Table 8.14).

Table 8.14: Marital status of respondents

	N	%
Single	72	25.4
Married	205	72.2
Divorced/widowed	7	2.5
Others	0	0.0
	284	100.0

Some 25.4% of respondents revealed that they were single, while the remaining respondents (2.5%) were either divorced or widowed.

Some 24.5% of respondents had at least three people living together in the same household (Table 8.15).

Some 17.5% of respondents had either four or five people living in the same household, followed by 12.0% of respondents who lived with six people. Only 11.3% of the respondents lived with one other person in their household.

Table 8.15: The number of people living in respondents household

	N	%
1	12	4.4
2	31	11.3
3	67	24.5
4	48	17.5
5	48	17.5
6	33	12.0
7	17	6.2
8	10	3.6
9	2	0.7
10	2	0.7
11	3	1.1
12	1	0.4
	274	100.0

Some 57.5% of respondents had at least one child who was under the age of 18 years living in the same household (Table 8.16).

Table 8.16: Do you have any children under 18 living in your household

	N	%
Yes	161	57.5
No	119	42.5
	280	100.0

More than half of the respondents (54.2%) who had a child under the age of 18 years residing in the same household had at least one child aged less than 5 years old (Table 8.17).

Table 8.17: Numbers of children under 18 living in respondents household

	Numbers of children				N	%
	1	2	3	4		
Children aged less than 5 years old	69	39	12	3	123	54.2
Children aged between 6-12 years old	37	19	10		66	29.1
Teenagers aged between 13-17 years old	24	13	1		38	16.7
					227	

Some 29.1% of respondents had a child aged between 6 to 12 years old residing in the same household, while 16.7% of respondents had at least one teenager who was aged between 13 to 17 years old living in the same household.

With regard to the highest level of education the respondents had attained, some 29.6% held either an undergraduate degree or a professional certificate (Table 8.18).

Table 8.18: Education level of respondents

	N	%
Primary school	3	1.1
Secondary school	70	24.6
Diploma	70	24.6
First degree/professional certificate	84	29.6
Postgraduate	57	20.1
	284	100.0

Some 24.6% of respondents had either completed high school or held a diploma, while 20.1% of respondents had earned a postgraduate degree. Only 1.1% of respondents had not attended secondary school.

Once again it was observed that the largest group of respondents worked as clerical staff (16.2%) (Table 8.19).

Some 10.5% of respondents were business executives, 9.0% were government officers, while 7.2% were managers.

Some 5.1% of respondents were either housewives or research assistants, 4.7% were students, 4.3% were academics, 3.9% were accountants and 3.6% were employed as bank executives or computer programmers.

Table 8.19: Occupations of respondents

	N	%
Accountant	11	3.9
Academics	12	4.3
Administrative officer	2	0.7
Bank executive	10	3.6
Cashier	1	0.4
Clerk	45	16.2
Counsellor	1	0.4
Dentist	1	0.4
Editor	2	0.7
Engineer	7	2.5
Entrepreneur	7	2.5
Executive	29	10.5
Farmer	1	0.4
Financial advisor	2	0.7
Government officer	25	9.0
Graphic designer	3	1.1
Housewife	14	5.1
Interpreter	1	0.4
IT executive	3	1.1
Journalist	1	0.4
Lawyer	1	0.4
Librarian	2	0.7
Manager	20	7.2
Marketer	4	1.4
Nurse	3	1.1
Pensioner	4	1.4
Pharmacist	2	0.7
Programmer	10	3.6
Police officer	1	0.4
Quantity surveyor	1	0.4
Receptionist	2	0.7
Research assistant	14	5.1
Secretary	8	2.9
Student	13	4.7
Supervisor	2	0.7
Teacher	5	1.8
Technician	7	2.5
	276	

Some 26.4% of respondents had an average monthly income in the range of RM1,501 to RM3,000, followed by 24.6% of respondents who had an average monthly income between RM3,001 to RM4,500 (Table 8.20).

Table 8.20: Monthly income of respondents

	N	%
Less than RM1,500	25	8.8
RM1,501-RM3,000	75	26.4
RM3,001-RM4,500	70	24.6
RM4,501-RM6,000	49	17.3
RM6,001-RM7,500	25	8.8
RM7,501-RM9,000	23	8.1
RM9,001 and above	17	6.0
	284	100.0

Only 8.8% of respondents had an average monthly income less than RM1,500.

The largest group of respondents (90.1%) were Malay (Table 8.21).

Table 8.21: Ethnicity of respondents

	N	%
Malay	256	90.1
Chinese	12	4.2
Indians	6	2.1
Others	10	3.5
	284	100.0

Some 4.2% of respondents were Chinese, while 3.5% of respondents represented ethnic groups from Sabah and Sarawak. Indians comprised only 2.1% of the sample.

In this survey, the largest group of respondents were from Kuala Lumpur (22.3%) (Table 8.22).

Some 13.3% of respondents were from Bandar Baru Bangi and 12.6% of the respondents were from Kajang.

Other respondents resided in such areas as Batu Caves (8.6%), Petaling Jaya (5.8%), Ampang (5.4%), Klang (5.0%), Seri Kembangan (4.7%), Rawang (4.3%) and Shah Alam (4.3%).

Table 8.22: Respondents postcode area

Postcode	Area	N	%
40000-40450	Shah Alam	12	4.3
41200-42100	Klang	14	5.0
42200	Kapar	1	0.4
42800	Tanjung Sepat	1	0.4
43000	Kajang	35	12.6
43100	Hulu Langat	1	0.4
43200	Cheras	8	2.9
43300	Seri Kembangan	13	4.7
43500	Semenyih	3	1.1
43600	Bangi	6	2.2
43650	Bandar Baru Bangi	37	13.3
43800	Dengkil	1	0.4
43900	Sepang	4	1.4
43950	Sungai Pelek	1	0.4
46000-47830	Petaling Jaya	16	5.8
47000	Sungai Buloh	1	0.4
47100-47150	Puchong	4	1.4
47610	Subang Jaya	1	0.4
48000-49200	Rawang	12	4.3
50000-59200	Kuala Lumpur	62	22.3
62050-62662	Putrajaya	5	1.8
64000	KLIA	1	0.4
68000	Ampang	15	5.4
68100	Batu Caves	24	8.6
		278	

8.4 Part Three: Comparing the respondent data sets

A non-parametric test was performed to compare the two data sets. For those respondents who purchased fresh/chilled meat and those who purchased fresh fruit and vegetables, there was no significant difference between the samples with regard to the gender of the respondent (Table 8.23).

Table 8.23: Non-parametric tests for gender of respondents

Gender	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Male	37	14.2	58	20.4	0.058
Female	223	85.8	226	79.6	
N	260	100.0	284	100.0	

Similarly, the Mann-Whitney test was unable to identify any difference between the samples with regard to the age distribution of the respondents (Table 8.24).

Table 8.24: Non-parametric tests for age of respondents

Age	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
18-25 years old	32	12.3	40	14.1	0.616
26-34 years old	146	56.2	144	50.7	
35-44 years old	47	18.1	51	18.0	
45-54 years old	20	7.7	37	13.0	
55-64 years old	12	4.6	12	4.2	
65 and above	3	1.2	0	0.0	
N	260	100.0	284	100.0	

Nor was there any significant difference between the samples with regard to the marital status of the respondents (Table 8.25).

Table 8.25: Non-parametric tests for marital status of respondents

Marital status	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2- tailed)
	n	%	n	%	
Single	49	18.8	72	25.4	0.093
Married	205	78.8	205	72.2	
Divorced/widowed	4	1.5	7	2.5	
Others	2	0.8	0	0.0	
N	260	100.0	284	100.0	

No significant difference could be detected between the samples with regard to the number of people living in the respondents household (Table 8.26).

Table 8.26: Non-parametric tests for the number of people living in respondents household

Number of people	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
1	9	3.6	12	4.4	0.340
2	36	14.2	31	11.3	
3	54	21.3	67	24.5	
4	58	22.9	48	17.5	
5	51	20.2	48	17.5	
6	22	8.7	33	12.0	
7	8	3.2	17	6.2	
8	15	5.9	10	3.6	
9	0	0.0	2	0.7	
10	0	0.0	2	0.7	
11	0	0.0	3	1.1	
12	0	0.0	1	0.4	
N	253	100.0	274	100.0	

Nor was there any difference in the number of children under the age of 18 who were living in the same household as the respondents (Table 8.27).

Table 8.27: Non-parametric tests for any children under 18 living in respondents household

Any children under 18 years old	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Yes	163	63.7	161	57.5	0.145
No	93	36.3	119	42.5	
N	256	100.0	280	100.0	

The Mann-Whitney test was also unable to detect any significant difference between the samples with regard to the education level of the respondents (Table 8.28).

Table 8.28: Non-parametric tests for education level of respondents

Education level	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Primary school	1	0.4	3	1.1	0.087
Secondary school	41	15.8	70	24.6	
Diploma	61	23.5	70	24.6	
First degree/professional certificate	103	39.6	84	29.6	
Postgraduate	54	20.8	57	20.1	
N	260	100.0	284	100.0	

Nor was it possible to identify any significant difference between the monthly income of the respondents between the two samples (Table 8.29).

Table 8.29: Non-parametric tests for monthly income of respondents

Income	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Less than RM1,500	35	13.5	25	8.8	0.473
RM1,501-RM3,000	50	19.2	75	26.4	
RM3,001-RM4,500	61	23.5	70	24.6	
RM4,501-RM6,000	44	16.9	49	17.3	
RM6,001-RM7,500	27	10.4	25	8.8	
RM7,501-RM9,000	12	4.6	23	8.1	
RM9,001 and above	31	11.9	17	6.0	
N	260	100.0	284	100.0	

Finally, the Mann-Whitney test was unable to identify any significant difference in the ethnic groups who participated in each survey (Table 8.30).

Table 8.30: Non-parametric tests for ethnicity of respondents

Ethnicity	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Malay	243	93.5	256	90.1	0.167
Chinese	7	2.7	12	4.2	
Indian	2	0.8	6	2.1	
Others	8	3.1	10	3.5	
N	260	100.0	284	100.0	

Theoretically, both data sets could therefore be combined and analysed together as one sample.

8.5 Part Four: Sample validation and review

Census 2000 revealed that in Malaysia, the number of men outnumbered the number of women (Malaysian Department of Statistics 2000). It was reported that there were 104 males for every 100 females. However, in the decision to purchase either fresh/chilled meat or fresh fruit and vegetables, the majority of respondents were females (82.5%) (Table 8.31).

Table 8.31: Gender of respondents

Gender	Fresh/chilled meat survey	Fresh fruit and vegetables survey	Total	%
Male	37	58	95	17.5
Female	223	226	449	82.5
	260	284	554	100.0

This finding concurs with previous consumer research undertaken in Malaysia where the majority of food was purchased by females: 62.5% in Nooh et al. (2007), 63.8% in Ahmad and Juhdi (2008) and 57.1% in Wan Omar et al. (2008).

With regards to the age group of respondents, more than half of the respondents for both surveys were aged between 26 to 44 years old. Response rates were found to decline with the increasing age of the respondents despite offering a 'Green Bag' as a token of appreciation upon completing the survey. Factors such as the survey was too long or they did not have the time to complete the survey were among the reasons commonly given by shoppers from the older age groups when they were asked to participate. High numbers of participants from the younger generation were also found in other research involving Malaysian consumers such as Haque and Khatibi (2005), Ghazali et al. (2006a) and Wan Omar et al. (2008). Nevertheless, the small number of elderly respondents was no cause for alarm as data available from the Malaysian Department of Statistics (2009) indicated that 63.5% of the Malaysian population was in the age group of 15 to 64 years olds. In

this study, 98.9% of respondents who participated in the fresh/chilled meat survey fell within this range, and 100.0% of respondents for the fresh fruit and vegetables survey.

Age was also connected with the marital status of the respondents. According to the 2000 census, the minimum age for a Malaysian female to marry was 25.1 years, while for the male it was 28.6 years (Malaysian Department of Statistics 2009). Since the largest group of respondents were aged between 26 to 34 years, most of them were married.

The analyses from both surveys demonstrated that the largest group of respondents had three or four people living in the same household. Heng and Guan (2007) revealed in their research that the average household size for Malaysians was approximately 4 persons. The Malaysian Department of Statistics (2008) report that the average number of occupants per household for the area of Selangor and Kuala Lumpur was 3.9 persons and 4.1 persons respectively. Mokhlis (2006) reported that the average number of people in a Malaysian household was 5, which consisted of two adults and 3 children. The findings also revealed that there are a large number of households with five to eight people residing in the same house. It is not uncommon for Malaysians to live with their parents, in-laws or close relatives (DaVanzo and Chan 1994).

Most respondents from both surveys indicated that they had at least one child under the age of 18 who lived together in the same household. A similar result indicated that more than half of the respondents from both surveys had at least one child under the age of five years old.

Most respondents from both surveys indicated that they possessed at least an undergraduate degree or a professional certificate. As the survey was conducted in the Klang Valley, which is a highly urbanised area, this result was not unexpected (Othman 1990; Haque and Khatibi 2005).

In terms of occupation, the results revealed that the majority of respondents were employed either within the private sector, the government sector or were operating

their own businesses. As the majority of respondents for both surveys were female and married, it is possible to conclude that the sample was comprised primarily of married women who were actively participating in the labour force. Othman (1990) noted that the purchasing behaviour of working women may differ from non-working women.

The middle income group was defined as those households earning between RM2,000 to RM4,000 per month (Malaysia 2008). Rice and Mahmoud (1999) reported that in 1995, 47.0% of Malaysian households were in the middle income group. The findings of this research were not dissimilar to the results of Ghazali et al. (2006a) and Mutum and Ghazali (2006) who found that 57.6% and 62.9% of respondents respectively belonged to the middle income group. For the fresh/chilled meat survey, 42.7% of respondents and 53.0% of the respondents from the fresh fruit and vegetables survey were drawn from the middle income group.

The Malaysian Department of Statistics (2008) report that 65.0% of the Malaysian population are Malay, followed by Chinese (26.0%), Indians (7.7%) and other races (1.0%). Thus it was no surprise to find that the majority of respondents who participated in both surveys were Malay: 93.5% of the respondents for the fresh/chilled meat survey, and 90.1% of the respondents for the fresh fruit and vegetables survey. This result compares favourably with other surveys involving the purchasing behaviour of Malaysian consumers: 70.0% of Malay respondents in Haque and Khatibi (2006) and 55.6% in Ong et al. (2008). Mokhlis (2006) proposed that Malay respondents were generally keen and cooperative when participating in surveys compared to non-Malay respondents.

To eliminate bias, the interviews were conducted on randomly sampled respondents at shopping malls and traditional markets in the Klang Valley. According to Euromonitor (2006), over 70.0% of groceries were sold through supermarkets in Malaysia. Therefore, the decision to conduct the research in both retail outlets was undertaken with the intention of achieving a broad spectrum of income distribution and levels of education among respondents.

However, the findings from both surveys have identified differences in the residential areas from which the respondents were drawn. The largest group of respondents for the fresh meat survey were from Bandar Baru Bangi, while most respondents in the fresh fruit and vegetables survey were from Kuala Lumpur. Although Kuala Lumpur has a great mixture of ethnic groups, areas such as Wangsa Maju, Setiawangsa, Titiwangsa, Lembah Pantai and Bandar Tun Razak have a higher Malay population, whereas Kepong, Segambut, Bukit Bintang, Seputeh and Cheras have a higher Chinese population (Malaysian Department of Statistics 2006). Overall, the ratio of respondents residing in the Klang Valley region was well distributed.

The findings of this chapter have demonstrated that the key characteristics of the sample drawn for both surveys in this study are not significantly different. Potentially, this enables the surveys to be combined, thereby greatly enhancing the capacity of the results to be extended to the broader population in the Klang Valley region.

9. Store choice

9.1 Chapter outline

Chapter Nine reports on the criteria which most influence the respondents' choice of retail store, revealing where they purchase the majority of their fresh/chilled meat and fresh fruit and vegetables.

Part One provides a description of the respondents' store choice behaviour when purchasing fresh/chilled meat. Respondents' store choice behaviour when purchasing fresh fruit and vegetables is reported in Part Two. Part Three provides a synthesis which compares and contrasts the variables which were perceived to be the most influential in the respondents' choice of retail store. Part Four summarises this chapter.

9.2 Part One: Respondents' store choice behaviour when purchasing fresh/chilled meat

Some 95 respondents (36.5%) purchased the majority of their fresh/chilled meat from wet markets or fresh markets (Table 9.1).

Table 9.1: Principal place of purchase for fresh/chilled meat

Modern retail outlets	**N**	**%**
Hypermarket	52	20.0
Supermarket	35	13.5
Traditional markets		
Wet market/Fresh market	95	36.5
Night market	31	11.9
Farmers market	17	6.5
Grocery store/mini market	17	6.5
Wholesale market	13	5.0
	260	100.0

Modern retail outlets: hypermarkets (20.0%) and supermarkets (13.5%) were the second most preferred place to purchase fresh/chilled meat among respondents. The remaining respondents purchased their fresh/chilled meat from several other

traditional retail formats including the night market (11.9%), farmers markets (6.5%), grocery stores or mini markets (6.5%) and wholesale markets (5.0%).

Most respondents (51.2%) purchased fresh/chilled meat one time per week (Table 9.2).

Table 9.2: Frequency of purchasing fresh/chilled meat

	N	%
Daily	4	1.5
2-3 times per week	35	13.5
Once a week	133	51.2
Once every 2 weeks	68	26.2
Once a month	13	5.0
Others	7	2.7
	260	100.0

Some 26.2% of respondents purchased fresh/chilled meat one time every two weeks, while some 13.5% purchased fresh/chilled meat two to three times per week. Only 5.0% of respondents purchased fresh/chilled meat one time per month, while some 2.7% of respondents purchased fresh/chilled meat occasionally such as during festive seasons or family gatherings. The percentage of respondents purchasing their fresh/chilled meat daily was relatively small (1.5%).

Respondents who most often purchased fresh/chilled meat from a supermarket (62.9%) were also more likely to purchase from hypermarkets (20.4%) and/or from grocery stores or mini markets (22.5%) (Table 9.3).

Respondents who frequently purchased fresh/chilled meat from a hypermarket (67.6%) were also more likely to purchase from wholesale markets (24.0%) and/or from supermarkets (23.8%).

Respondents who frequently purchased fresh/chilled meat from a wet market or a fresh market (69.9%) were more likely to purchase from other traditional markets such as wholesale markets (20.0%), night markets (19.6%), grocery stores/mini markets (15.8%) and/or farmers markets (13.5%).

Table 9.3: The proportion of the total amount of the fresh/chilled meat purchased from the following retail outlet

	Percent						
	Supermarket	Hypermarket	Wet market/ Fresh market	Farmers market	Night market	Wholesale market	Grocery store/mini market
Supermarket	62.9	23.8	16.5	15.0	14.6	8.3	13.3
Hypermarket	20.4	67.6	17.9	6.8	11.4	10.3	13.4
Wet market/ Fresh market	12.7	17.4	69.9	13.3	13.6	7.0	13.8
Farmers market	8.7	3.5	13.5	77.0	8.5	2.0	7.6
Night market	16.9	16.2	19.6	16.3	63.2	12.0	12.3
Wholesale market	12.6	24.0	20.0	10.0	16.3	55.9	12.8
Grocery store/ mini market	22.5	13.8	15.8	22.5	14.0	30.0	67.9

For those respondents who purchased the majority of the fresh/chilled meat consumed from a farmers market (77.0%), grocery stores (22.5%) provided the second most important source of fresh/chilled meat.

Respondents who purchased the majority of the fresh/chilled meat consumed in their household from a night market (63.2%), purchased 16.3% of the fresh/chilled meat consumed from wholesale markets, 14.6% from supermarkets, 14.0% from grocery stores/mini markets and/or 13.6% from wet markets/fresh markets.

Respondents who frequently purchased fresh/chilled meat from a wholesale market (55.9%) were more likely to purchase from grocery stores/mini markets (30.0%).

Grocery store shoppers (67.9%) also purchased fresh/chilled meat from the wet markets/fresh markets (13.8%), hypermarkets (13.4%), supermarkets (13.3%), wholesale markets (12.8%), and/or night markets (12.3%).

Freshness (85.2%) was the most frequently cited variable used by respondents in their decision to purchase fresh/chilled meat from a retail store (Table 9.4).

Table 9.4: Variables respondents consider in their decision to purchase fresh/chilled meat from their most preferred retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	101	70	25	13	4	213	85.2
Price	36	53	45	24	16	174	69.6
Cleanliness	17	49	35	18	16	135	54.0
Halal	59	13	9	11	6	98	39.2
Variety/a lot of choices	3	12	17	19	12	63	25.2
Location – near house/office	9	9	9	7	10	44	17.6
Loyalty to the same vendors	6	4	14	10	9	43	17.2
Quality assurance	4	8	9	6	3	30	12.0
Facilities provided	1	5	7	4	6	23	9.2
Comfortable environment	3	1	5	8	3	20	8.0
Size	3	6	5	5	1	20	8.0
Type of shop	1	3	7	2	6	19	7.6
Texture	2	1	1	4	3	11	4.4
Colour	1	3	4			8	3.2
Country-of-origin	1	1	1	4	1	8	3.2
Quantity			4	1	3	8	3.2
Intended use	2		2	1	1	6	2.4
No smell	1	1	2			4	1.6
I can self select		1	2	1		4	1.6
No diseases		1		2	2	5	2.0
Organic		1	2	1	1	5	2.0
Nicely packed			1	2	2	5	2.0
Promotion			1	2	2	5	2.0
Based on previous experience		1		1	1	3	1.2
Number of respondents	250						

The second group of variables which were most frequently cited included price (69.6%) and cleanliness (54.0%). Other variables which were most frequently cited included Halal (39.2%), and variety (25.2%). In terms of Halal, respondents were concerned mainly with the appropriateness of slaughtering the chicken or cattle. A retail outlet displaying a Halal certificate or logo was considered advantageous and could attract more customers to purchase from the shop.

A variety of choice and the ability to choose many different portions enabled respondents to purchase the desired meat in the most appropriate form for the way in which they intended to cook and present the meat. For example, several respondents preferred to purchase a whole dressed chicken, while others preferred to purchase chicken proportions such as chicken drumsticks, chicken wings and others.

Other variables respondents considered in their decision to purchase fresh/chilled meat were location (17.6%), loyalty to the same vendors (17.2%) and quality assurance (12.0%). Location described the concept of convenience as respondents indicated that their preferred retail outlet was close to where they either lived or worked. Loyalty to the same vendor was a major consideration for several respondents on each occasion that they purchased fresh/chilled meat. Respondents were loyal to those vendors who were friendly, trustworthy and knowledgeable, and provided customers with the services they required.

The need for the meat to be free from any disease (2.0%), organic (2.0%), nicely packed (2.0%) and promoted (2.0%) were among the least frequently cited variables that influenced the respondents' decision to purchase fresh/chilled meat from a retail store. This does not suggest that respondents were less concerned about food safety or organic in their purchase of fresh/chilled meat, but rather that respondents implicitly assumed that the meat products offered for sale were free of disease and natural. As for fresh/chilled meat that was nicely packed and promoted, this mainly related to that product that was available from a supermarket or hypermarket. Given that more than half of the respondents (66.4%) were reported to purchase the majority of their fresh/chilled meat from a traditional retail outlet where the meat was neither pre-packed or aggressively promoted, it comes as no surprise to learn that these two variables were so infrequently cited by respondents in their decision to purchase fresh/chilled meat.

When respondents were asked to indicate how important a number of attributes were in their decision to purchase, a total of sixteen variables were found to be equally important in the respondents' decision to purchase fresh/chilled meat from a retail store (Table 9.5).

The variables included the physical attributes of the meat (freshness, clean and good quality produce); convenience (a wide range of fresh produce, I can self select, all product is clearly priced and labelled, a wide range of other fresh products, product is easily accessible, a quick fast checkout, a lot of sections and everything under one roof); value (value for money and competitive price), and the characteristics of

the retail outlet (fresh produce is refrigerated and good customer service/friendly staff).

Table 9.5: Importance of variables influencing respondents' criteria of preferred retail outlet

	Mean	SD
Freshness	5.84[a]	0.39
Cleanliness	5.79[a]	0.48
Good quality produce	5.74[a]	0.56
A wide range of fresh produce	5.61[a]	0.60
I can self select	5.52[a]	0.78
All product is clearly priced	5.51[a]	0.77
Value for money	5.51[a]	0.74
A wide range of other fresh products	5.49[a]	0.72
Product easily accessible	5.44[a]	0.79
Competitive price	5.42[a]	0.96
Product is clearly labelled	5.39[a]	0.89
Good customer service/friendly staff	5.28[a]	0.85
Quick/fast checkout	5.26[a]	0.98
Fresh produce is refrigerated	5.25[a]	0.94
A lot of sections (wet and dry sections)	5.24[a]	0.95
Everything all under one roof	5.19[a]	0.98
Origin of the product is clearly displayed	5.10[b]	1.06
Well organised/well laid out	5.10[b]	0.96
Offer special prices or discounts	5.06[c]	1.11
Local produce	5.06[c]	1.03
Easy parking	5.04[c]	1.01
Trading hours	5.00[c]	0.96
Knowledgeable staff	5.00[c]	1.02
Near my house/work place	4.91[d]	1.04
Loyalty/always shop there	4.75[e]	1.12
Attractive display/presentation	4.73[e]	1.03
Opportunity to bargain on price	4.70[e]	1.16
Trolley and baskets are provided	4.68[e]	1.41
Return/refund policy	4.66[e]	1.14
Sample of the product	4.23[f]	1.32
Air-conditioned	4.21[f]	1.52
Advertising on radio/tv/newspaper	3.69[g]	1.31
Credit facilities	3.55[h]	1.64
Shopping points/loyalty programs	3.53[h]	1.46
Cater for kids	3.52[h]	1.58

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Those variables which were considered the least important included advertising for meat products on radio, television or newspapers, and several other features which described the retail outlet including credit facilities, shopping points/loyalty

programs and the extent to which the retail outlet catered for kids. These characteristics were found only among the modern retail formats.

The reality is however, that food shopping is a low involvement, habitual process (McKinna et al. 2007). It is unlikely therefore that respondents will utilise all 35 variables when purchasing fresh/chilled meat from a retail store. Therefore, principal component analysis with varimax rotation and Kaiser normalisation was applied in order to group the variables into a smaller set of components. Principal component analysis revealed five constructs which collectively explained 63.5% of the variance (Table 9.6).

Table 9.6: Factors influencing respondents' criteria of preferred retail outlet

	Factor				
	1	**2**	**3**	**4**	**5**
Product easily accessible	0.855				
Product is clearly labelled	0.765				
Quick fast checkout	0.734				
Local produce	0.668				
Origin of the product is clearly displayed	0.647				
Trading hours	0.625				
Loyalty/always shop there	0.603				
Air-conditioned		0.746			
Advertising on radio/tv/ newspaper		0.737			
Cater for kids		0.737			
Trolley and baskets are provided		0.697			
Credit facilities		0.686			
Shopping points/loyalty programs		0.635			
Good quality produce			0.818		
Freshness			0.790		
Clean			0.707		
Everything all under one roof				0.726	
Near my house/work place				0.720	
Easy parking				0.712	
Opportunity to bargain on price					0.692
Eigenvalue	6.584	2.204	1.462	1.347	1.106
Percent variance	19.67	17.11	10.76	9.77	6.19
Cumulative variance	19.67	36.78	47.54	57.32	63.51
Cronbach's alpha	0.858	0.838	0.736	0.664	
Factor mean	5.15^{b}	3.87^{d}	5.79^{a}	5.05^{b}	4.70^{c}

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 6.58 was comprised of seven items. This factor was labelled as “perceived risk”, for these items collectively explained the perceived risk which operated at both the product level and the store level. Consumers could minimise temporal or time risks if products were easily accessible, checkouts were operating quickly and efficiently, and the stores were open at a time that was convenient to the shopper. The risks associated with the product itself could be lessened when the product was clearly labelled and the origin of the product was clearly displayed. Loyalty is itself a risk mitigation mechanism. With a Cronbach’s alpha of 0.86, this construct was very reliable. With a mean of 5.2, this factor was found to be the second most important in the respondents’ decision to purchase fresh/chilled meat.

Factor Two had an Eigenvalue of 2.20 and a Cronbach’s alpha of 0.84. The six items that loaded onto this factor clearly described the “characteristics of a modern retail outlet” where the premises were generally air-conditioned, which provided a more comfortable environment for the shoppers and their children. Consumers could also benefit from the facilities provided by most modern retail outlets including credit card facilities and the use of trolleys and baskets for shopping. Promotional items such as shopping points/loyalty programs and advertised goods were additional features of modern retailing. However, this factor was the least important criteria in the respondents’ decision to purchase fresh/chilled meat from a retail store.

Factor Three, with an Eigenvalue of 1.46 included three items: good quality produce, freshness and cleanliness. This factor was labelled as “quality”. With a Cronbach’s alpha of 0.74, not only was the construct considered reliable, but it was also the singly most important construct in the respondents’ decision to purchase fresh/chilled meat from a retail store.

Factor Four, with an Eigenvalue of 1.35 was also comprised of three items. Factor Four described the concept of “convenience”. When purchasing fresh food, consumers may consider going to a particular retail outlet where all the households’ consumables are available under one roof, the location of the store is close to their house or workplace, and there is ample car parking space. As the concept of

convenience facilitated the shopper's purchasing experience, this factor was the second most important construct respondents considered in their decision to purchase fresh/chilled meat from a retail outlet. However, the Cronbach's alpha for this factor was only 0.66.

Factor Five, with an Eigenvalue of 1.11 captured only one item which described "price". Respondents perceived price differently, depending on the place of purchase. For example, the price of fresh/chilled meat in a traditional market is not commonly fixed and thus consumers have an opportunity to bargain. Conversely, in modern retail outlets, the prices are fixed. Nevertheless, competition between the retail chains is often based on offering the lowest price which in the end, benefits the consumers. This was the third most important factor respondents considered in their decision to purchase fresh/chilled meat from a retail outlet.

In thinking about the quality criteria respondents most often used in their decision to purchase fresh/chilled meat, irrespective of the retail store, freshness (82.8%) was the most frequently cited variable (Table 9.7).

Other quality variables most frequently cited by respondents included Halal (57.6%), cleanliness (43.6%) and price (35.2%). Quality was also associated with a range of variables which described the physical appearance of the meat such as colour (17.6%), texture (15.6%) and smell (14.8%). Quality was also perceived to mean safe to eat (13.6%) and to be free from any chemicals and growth promotants (10.8%).

One of the variables that was cited the least often related to the conditions under which the meat was stored (cold/chilled/frozen) at 1.6%.

Table 9.7: Variables respondents consider when they think about the quality of fresh/chilled meat

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	85	73	26	13	10	207	82.8
Halal	87	15	17	16	9	144	57.6
Cleanliness	19	42	33	11	4	109	43.6
Price	15	15	30	14	14	88	35.2
Colour	15	15	6	6	2	44	17.6
Texture	3	13	11	6	6	39	15.6
No smell	7	9	14	4	3	37	14.8
Safe to eat	2	4	9	10	9	34	13.6
Variety/a lot of choices	2	10	9	7	1	29	11.6
Freedom from chemical/growth promotants	1	7	9	6	4	27	10.8
Local	3	9	4	1	2	19	7.6
Country-of-origin	3	2	4	4	4	17	6.8
Quality assurance	4	4	2	5	1	16	6.4
Label	3	3	2	4	2	14	5.6
Size	1	3	3	5	2	14	5.6
Taste		1	4	3	5	13	5.2
Nutrition		2	5	4	2	13	5.2
Nicely packed		2	1	3	5	11	4.4
Organic		2	1	3	2	8	3.2
I can self select			2	3	3	8	3.2
Quantity		2	1	3	1	7	2.8
Comfortable environment		1	1	2	1	5	2.0
Display area well organised/ products arranged in good order			1	3	1	5	2.0
Cold/chilled/frozen storage		1	1	1	1	4	1.6
Based on previous experience		1		1		2	0.8
Time and energy factor				1	1	2	0.8
	250						

Respondents were then asked to indicate the extent to which they agreed with 18 quality statements on a scale of 1 to 6, where 1 was “I disagree a lot” and 6 was “I agree a lot”. Eleven variables were afforded the highest measure of agreement (Table 9.8).

For the majority of respondents, good quality meant that the meat was fresh, safe to eat, and free from chemical residues, pests and diseases, and antibiotics and growth promotants. Good quality meat was nutritious, tasted good and was highly correlated with value (that is, respondents would not be disappointed after consuming the meat, they were able to utilise most of the product, and thus the

purchase represented good value for money). While Halal was also perceived to be a reliable indicator of good quality, the high standard deviation indicated considerable variance in the responses suggesting that the need for the meat to be Halal was not important for all respondents.

Table 9.8: The meaning of quality of fresh/chilled meat

Quality means that the product…	Mean	SD
is fresh	5.86[a]	0.51
is safe to eat	5.85[a]	0.51
is guaranteed Halal	5.71[a]	0.96
is nutritious	5.66[a]	0.67
is free from chemical residues	5.65[a]	0.81
is free from pests and diseases	5.57[a]	0.84
I will not be disappointed when I eat the product	5.51[a]	0.87
is free from antibiotics/growth promotants	5.46[a]	0.98
will taste good	5.44[a]	0.85
I will be able to use most if not all of the product I have purchased	5.43[a]	0.89
is good value for money	5.42[a]	0.98
has been produced in a way that is good for the environment	5.27[b]	0.94
was produced in a way that did not endanger the farmers	5.15[c]	1.04
was produced with due regard for animal welfare	5.04[d]	1.12
looks attractive	4.78[e]	1.12
will have a long shelf life	4.75[e]	1.25
is attractively packaged	4.68[f]	1.19
will be more expensive	3.71[g]	1.59

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

That variable which was the least often associated with good quality was a high price, suggesting that in purchasing fresh meat, there was little association between quality and price.

Principal component analysis revealed three factors which collectively explained 74.8% of the variance (Table 9.9).

Factor One, with an Eigenvalue of 3.67, captured three items that accounted for 27.9% of the variance. The Cronbach's alpha for this factor was 0.82. Collectively, these three items described "meat production" which was comprised of the extent to which respondents were concerned about the environment, farmers welfare and animal welfare. This was the second most highly rated factor respondents considered when thinking about the quality of fresh/chilled meat.

Table 9.9 Factors influencing quality of fresh/chilled meat

Quality means that the product…	Factor		
	1	**2**	**3**
was produced in a way that did not endanger the farmers	0.866		
has been produced in a way that is good for the environment	0.817		
was produced with due regard for animal welfare	0.784		
looks attractive		0.844	
is attractively packaged		0.778	
will have a long shelf life		0.769	
is safe to eat			0.873
is fresh			0.870
Eigenvalue	3.665	1.262	1.053
Percent variance	27.96	25.89	20.90
Cumulative variance	27.96	53.85	74.76
Cronbach's alpha	0.821	0.768	0.758
Factor mean	5.16[b]	4.74[c]	5.86[a]

where those items with the same superscript are not significantly different at p = 0.05

Factor Two, with an Eigenvalue of 1.26 also had three items. It accounted for 25.9% of the variance. The Cronbach's alpha for this factor was 0.77. Items in Factor Two described the utility of the meat product: looks attractive, attractively packaged and long shelf life. Despite the benefits the product may have to offer, this was the least highly rated factor in the respondents' mind when considering the quality of fresh/chilled meat.

Factor Three, with an Eigenvalue of 1.0, captured two items that accounted for 20.9% of the variance. The Cronbach's alpha for this factor was 0.76. This factor was labelled as "safe" for it captured the respondents concerns with regards to food safety and freshness. Not unexpectedly, Factor Three was the most highly rated factor in the respondents' evaluation of meat quality.

Most respondents (87.1%) recognised that there was a difference in the quality of the fresh/chilled meat purchased from both the modern and traditional retail outlets (Table 9.10).

Table 9.10: Are there any difference in the quality of fresh/chilled meat

	N	%
Yes	222	87.1
No	33	12.9
	255	

Some 62.2% of respondents believed that the traditional retail markets offered better quality fresh/chilled meat compared to modern retail outlets (Table 9.11).

Table 9.11: Which of the two retail outlets offer best quality of fresh/chilled meat

	N	%
Modern retail outlets	98	37.8
Traditional markets	161	62.2
	259	

Irrespective of their preferred place of purchase, the majority of respondents (97.9%) cited freshness as that criteria which was most able to differentiate between the quality of the fresh/chilled meat offered by modern retail outlets and the traditional markets (Table 9.12).

Other variables which respondents considered to differentiate between the quality of the fresh/chilled meat purchased from their preferred retail outlet were cleanliness (38.7%), Halal (29.4%) and price (21.4%). Halal required that the meat be appropriately slaughtered according to Islamic regulations and a Halal certificate from the Department of Islamic Development Malaysia (JAKIM) be displayed by vendors.

Whether the meat was nicely packaged (13.9%), chilled or frozen (13.9%), there was a variety of choice (10.9%), and attractive appearance (10.1%) provided yet another group of variables that respondents considered to differentiate between the quality of the fresh/chilled meat available from different retail outlets. The equipment used to cut and prepare the meat (9.7%) and a good relationship with trusted vendors (9.2%) were other variables cited by respondents as influencing

their perception of the quality of the fresh/chilled meat offered by different retail stores.

Table 9.12: Variables respondents consider to differentiate the quality of fresh/chilled meat is better from another retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	120	66	32	14	1	233	97.9
Cleanliness	32	28	13	12	7	92	38.7
Halal (Slaughtered/logo)	21	19	15	11	4	70	29.4
Price	4	19	13	7	8	51	21.4
Nicely packaged	10	10	11	2		33	13.9
Chilled/frozen storage	14	7	5	4	3	33	13.9
Variety/a lot of choices	3	8	5	5	5	26	10.9
Attractive appearance	4	9	3	3	5	24	10.1
Meat being cut using modern equipment	3	6	6	6	2	23	9.7
Good relationship between vendors and customers	2	1	8	9	2	22	9.2
Quality	3	3	1	2	8	17	7.1
Origin of the meat is known	4	3	4	1	2	14	5.9
Smell	3	4	2	2	1	12	5.0
Colour	4	5	3			12	5.0
Freedom from chemicals/growth promotants	2	6	2	1	1	12	5.0
I can self select	3	4	2	1	1	11	4.6
Safe to eat	1	2	2	4	1	10	4.2
Label	1	2	3	1	1	8	3.4
Freedom from diseases	1	1	3	3		8	3.4
A prestige outlet	1	4			2	7	2.9
Taste			5		1	6	2.5
From Malaysia/local supplies		1		1	4	6	2.5
Comfortable environment		1	2			3	1.3
Organic			2	1		3	1.3
Trading hours	1			1	1	3	1.3
Size	1			1		2	0.8
I can buy other products			1	1		2	0.8
Easy access			1			1	0.4
I am satisfied			1			1	0.4
Fast service			1			1	0.4
Near my house				1		1	0.4
	238						

Respondents were then asked to indicate the extent to which they agreed with 21 statements about their preferred choice of retail outlet when purchasing fresh/chilled meat. On a scale of 1 to 6, where 1 was “I disagree a lot” and 6 was “I

agree a lot", eight variables were afforded similar measures of agreement (Table 9.13). Four of these variables favoured shopping in a modern retail format, while another four variables favoured the traditional retail outlets.

Table 9.13: Respondents level of agreement/disagreement with each of these statements

	Mean	SD
Products in supermarkets are clearly priced	5.30[a]	0.81
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.14[a]	1.03
Chicken and beef are fresher in traditional markets	4.99[a]	1.16
Consumers can bargain on price in wet markets	4.99[a]	1.23
Retailers in the traditional market are more knowledgeable about the products they sell	4.85[a]	1.15
I prefer to buy my fresh meat from the same vendor in the traditional markets	4.83[a]	1.20
Fresh meat is displayed better in supermarkets	4.82[a]	1.02
The children feel comfortable when I shop at supermarkets	4.69[a]	1.24
Supermarkets offer a wider range of fresh food	4.58[b]	1.29
I buy my other household goods from supermarkets but I buy my chicken and beef supplies from traditional markets	4.50[c]	1.49
Supermarkets operate everyday while traditional markets operate only on certain days of the week	4.49[c]	1.52
Supermarkets offer better customer service than the traditional markets	4.47[c]	1.19
Traditional markets offer better quality meat at a much cheaper price	4.44[c]	1.29
Traditional markets seldom have a good or clean environment	4.36[c]	1.21
I cannot buy the other household items I need if I shop at traditional markets	4.23[d]	1.44
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	4.04[e]	1.44
The quality of the fresh meat available is better in supermarkets	4.02[e]	1.29
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.99[e]	1.31
At traditional markets, the vendors remember my name	3.84[f]	1.57
I go to supermarkets because of the shopping points I get	3.66[g]	1.51
I often meet my friends when I shop at traditional markets	3.38[h]	1.46

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

With regards to modern retail outlets, three of the four variables were perceived to reduce risk in the shopping experience (all products were clearly priced, fresh meat was displayed better, and a more comfortable atmosphere for the shopper and children), while the fourth variable was associated with convenience (I can buy all my groceries at the same time).

For those respondents who preferred to purchase their fresh/chilled meat from a traditional market, quality (fresher meat), price (opportunity to bargain on price), and a superior shopping experience (knowledgeable vendors and loyalty to the same vendor) were considered to be better than modern retail formats.

Using SPSS, cluster analysis was then utilised as a tool to group cases based on the similarity of responses to these same variables. Hierarchical cluster analysis suggested 2-5 cluster solutions, however, it quickly became apparent that a 2 cluster solution was the most appropriate as all mean scores were found to be significantly different (Table 9.14).

Cluster 1 described “modern retail shoppers”. This group had a higher mean score on convenience and enjoyed shopping at modern retail outlets because products were clearly priced, the stored offered a greater variety of fresh food, and the fresh meat was displayed better. Respondents purchasing from modern retail outlets were less concerned about building any long term or enduring relationship with the vendors, and they generally disliked the idea of going to a traditional market merely to purchase fresh/chilled meat.

Conversely, Cluster 2 described the “traditional market shoppers”. This group believed that the meat was both fresher and cheaper in the traditional market. They were more loyal as they purchased fresh/chilled meat from the same vendors and were prepared to go out of their way to purchase fresh/chilled meat from traditional markets, even although they often purchased other household products from supermarkets. They also enjoyed the opportunity to bargain on price.

Table 9.14: Respondents level of agreement/disagreement with each of these statements according to cluster

	Cluster 1		Cluster 2		P
	Mean	SD	Mean	SD	
The quality of the fresh meat available is better in supermarkets	4.82	0.90	3.62	1.26	0.000
Supermarkets operate everyday while traditional markets operate only on certain days of the week	5.02	1.28	4.27	1.53	0.000
Consumers can bargain on price in wet markets	4.55	1.36	5.29	1.02	0.000
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.59	0.64	4.95	1.07	0.000
I often meet my friends when I shop at traditional markets	2.84	1.25	3.79	1.45	0.000
Supermarkets offer a wider range of fresh food	5.33	0.83	4.19	1.28	0.000
At traditional markets, the vendors remember my name	3.34	1.56	4.24	1.44	0.000
I cannot buy the other household items I need if I shop at traditional markets	4.77	1.27	3.91	1.44	0.000
I go to supermarkets because of the shopping points I get	3.91	1.58	3.47	1.44	0.027
The children feel comfortable when I shop at supermarkets	5.17	0.95	4.44	1.29	0.000
Traditional markets seldom have a good or clean environment	4.96	1.14	4.07	1.12	0.000
Supermarkets offer better customer service than the traditional markets	4.96	0.93	4.26	1.21	0.000
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.74	1.33	4.23	1.22	0.004
I buy my other household goods from supermarkets but I buy my chicken and beef supplies from traditional markets	3.19	1.29	5.30	0.99	0.000
Traditional markets offer better quality meat at a much cheaper price	3.54	1.18	5.01	1.067	0.000
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	4.33	1.36	3.85	1.45	0.011
Fresh meat is displayed better in supermarkets	5.19	0.86	4.64	1.02	0.000
Chicken and beef are fresher in traditional markets	4.14	1.19	5.51	0.79	0.000
I prefer to buy my fresh meat from the same vendor in the traditional markets	3.96	1.25	5.36	0.84	0.000
Products in the supermarkets is clearly priced	5.48	0.65	5.23	0.89	0.014
Retailers in the traditional market are more knowledgeable about the products they sell	4.22	1.25	5.23	0.91	0.000

where 1 is "I disagree a lot" and 6 is "I agree a lot"

To verify the findings, a cross-tabulation was then used to investigate any relationship between the clusters that had been identified and the preferred place of

purchase. Respondents belonging to Cluster 1 purchased the majority of their fresh/chilled meat from hypermarkets (79.2%) and supermarkets (75.0%) (Table 9.15).

Table 9.15: Place of purchase by cluster

	Cluster 1		Cluster 2		Total
	n	%	n	%	
Supermarket	24	75.0	8	25.0	32
Hypermarket	38	79.2	10	20.8	48
Wet market/Fresh market	16	18.6	70	81.4	86
Farmers market	2	13.3	13	86.7	15
Night market	3	10.3	26	89.7	29
Wholesale market	5	38.5	8	61.5	13
Grocery store/mini-market	6	35.3	11	64.7	17
Total	94		146		240

[Pearson chi-square =79.16, df =6, p = 0.000]

Conversely, those respondents from Cluster 2 were more likely to buy a greater proportion of their fresh/chilled meat from the night market (89.7%), farmers market (86.7%) and the wet market/fresh market (81.4%).

Further confirmation was achieved when a cross-tabulation was used to differentiate the variables which best described the quality of the meat purchased according to those who opted to buy from modern retail outlets and those who preferred the traditional markets when purchasing fresh/chilled meat (Table 9.16).

While freshness was the most frequently cited variable, irrespective of the place of purchase, a greater proportion of the respondents who purchased fresh/chilled meat from the traditional markets cited freshness as that variable which was best able to differentiate the quality of the meat offered by the alternative retail formats.

Conversely, for those who preferred to purchase fresh/chilled meat from modern retail outlets, the cleanliness of the store and thus of the product was highlighted.

There was not much variation between the respondents' perceptions that the fresh/chilled meat was guaranteed Halal, as some 25.5% of the respondents who

shopped from modern retail outlets believed that the meat was Halal, while 30.1% of the respondents who purchased meat from the traditional markets believed that the meat was Halal. Similarly, the findings revealed that there was little difference in terms of the variety of the fresh/chilled meat available from modern retail outlets (9.6%) or the traditional market (10.3%).

Table 9.16: Clusters by which variables respondents consider to differentiate the quality of fresh/chilled meat is better from another retail outlet

	Cluster 1 (94)		**Cluster 2 (146)**	
	N	%	N	%
Freshness	67	71.3	140	95.9
Cleanliness	50	53.2	39	26.7
Halal (Slaughtered/logo)	24	25.5	44	30.1
Price	22	23.4	15	10.3
Nicely packaged	22	23.4	9	6.2
Chilled/frozen storage	21	22.3	11	7.5
Variety	9	9.6	15	10.3
Attractive appearance	14	14.9	10	6.8
Meat being cut using modern equipment	8	8.5	4	2.7
Good relationship between vendors and customers	3	3.2	19	13.0
Quality	9	9.6	5	3.4
Origin of the meat is known	4	4.3	9	6.2
Smell	1	1.1	11	7.5
Colour	1	1.1	10	6.8
Freedom from chemicals/growth promotants	2	2.1	9	6.2
I can self select	2	2.1	3	2.1
Safe to eat	3	3.2	7	4.8
Label	5	5.3	2	1.4
Freedom from diseases	3	3.2	5	3.4
A prestige outlet	5	5.3	0	0.0
Taste	0	0.0	5	3.4
From Malaysia/local supplies	0	0.0	6	4.1
Comfortable environment	2	2.1	1	0.7
Organic	0	0.0	1	0.7
Trading hours	2	2.1	1	0.7
Size	1	1.1	1	0.7
I can buy other products	1	1.1	1	0.7
I am satisfied	1	1.1	0	0.0

Modern retail shoppers (Cluster 1) clearly believe that the price at which fresh/chilled meat is offered in supermarkets and hypermarkets is a better indication of the quality than the prices offered in traditional markets. Superior product packaging (23.4%), chilled or frozen storage cabinets (22.3%), a more attractive appearance (14.9%) and the equipment used to cut the meat (8.5%) were the key

variables that differentiated the quality of the meat offered by modern retail outlets from that offered by the traditional market.

Conversely, a good relationship between vendors and customers in the traditional markets (13.0%) was an important motive considered by shoppers in determining the quality of the fresh/chilled meat offered in the traditional market.

An Independent samples t-test was then performed to investigate the relationship between the factors influencing respondents' criteria of preferred retail outlet and the clusters. Results indicate that there were significant differences for Factor Two, Factor Four and Factor Five between the clusters (Table 9.17).

Table 9.17: Results of principal component analysis (criteria of preferred retail outlet) by cluster

	Cluster 1		Cluster 2		Sig.
	Mean	**SD**	**Mean**	**SD**	
Factor 1: Perceived risk	5.11	0.73	5.14	0.68	0.713
Factor 2: Characteristics of a modern retail outlet	4.19	0.99	3.81	1.07	0.006
Factor 3: Quality	5.78	0.40	5.81	0.39	0.592
Factor 4: Convenience	5.29	0.86	5.00	0.90	0.013
Factor 5: Price	4.50	1.29	4.88	1.04	0.019

Factor Two and Factor Four were found to be significantly more important for modern retail shoppers who preferred a clean and comfortable place to shop and who sought greater convenience.

Factor Five on the other hand was found to be significantly more important for respondents in Cluster 2. Traditional market shoppers tend to be more price conscious and enjoy the opportunity to bargain on price with vendors that they trust and have a good relationship with.

An Independent samples t-test was then performed to investigate the relationship between the factors influencing the quality of fresh/chilled meat and the clusters. Results indicate that there no significant differences for each of the factors between the clusters (Table 9.18).

Table 9.18: Results of principal component analysis (quality of fresh/chilled meat) by cluster

	Cluster 1		Cluster 2		Sig.
	Mean	**SD**	**Mean**	**SD**	
Factor 1: Meat production	5.11	0.89	5.19	0.89	0.508
Factor 2: Utility	4.72	1.09	4.78	0.89	0.644
Factor 3: Safe	5.85	0.41	5.88	0.49	0.586

Socio-demographic variables were also tested against each cluster. Socio-demographic variables have been widely used for the purpose of segmenting and profiling consumers since it is relatively easy to collect, measure and analyse these types of variables (Schlegelmilch et al. 1996). However, much of the literature has demonstrated that socio-demographic variables are often ineffective for segmenting the behaviour of consumers. In classifying shoppers according to segment, Boedeker and Marjanen (1993) found that socio-demographic characteristics provided a very narrow perspective of consumer behaviour. Schlegelmilch et al. (1996) found that there was very little value in utilising socio-demographic characteristics for segmenting consumers who were more conscious about the environment. Similarly, according to Romano and Stefani (2006), taking into account only demographic variables in segmenting consumers' behaviour towards the purchase of food would not provide a very informative classification due to the weak correlation between these variables and purchase behaviour. For instance, Ramona and Stefani (2006) found that consumers' behaviour towards food safety was determined by trust variables such as the source and its reliability, rather than individual characteristics. In this study, variables such as gender, age, marital status, highest level of education attained, race and income were found not to be significantly different between the clusters.

Besides the socio-demographic variables, psychographics have been identified as a more important dimension in predicting consumer behaviour (Boedeker 1995). However, there are serious limitations in using psychographics in consumer intercept surveys and hence these measures were not employed.

9.3 Part Two: Respondents' store choice behaviour when purchasing fresh fruit and vegetables

Some 77 respondents (27.1%) purchased the majority of their fresh fruit and vegetables from hypermarkets (Table 9.19).

Table 9.19: Principal place of purchase for fresh fruit and vegetables

Modern retail outlets	**N**	**%**
Hypermarket	77	27.1
Supermarket	55	19.4
Traditional markets		
Wet market/Fresh market	58	20.4
Night market	49	17.3
Farmers market	16	5.6
Grocery store/Mini market	16	5.6
Wholesale market	13	4.6
	284	100.0

Some 20.4% of respondents purchased the majority of their fresh fruit and vegetables from wet markets/fresh markets, some 19.4% from supermarkets and 17.3% of respondents purchased the majority of their fresh fruit and vegetables from night markets. Farmers markets (5.6%), grocery stores (5.6%), and the wholesale markets (4.6%) were insignificant by comparison as the major place of purchase for fresh fruit and vegetables.

The majority of respondents (68.7%) purchased fresh fruit and vegetables at least one time per week (Table 9.20).

Table 9.20: Frequency of purchasing fresh fruit and vegetables

	N	**%**
Daily	2	0.7
2-3 times per week	59	20.8
Once a week	134	47.2
Once every 2 weeks	58	20.4
Once a month	58	20.4
Others	27	9.5
	284	100.0

Some 20.4% of respondents purchased fresh fruit and vegetables one time every two weeks or one time per month.

Respondents who purchased the majority of their fresh fruit and vegetables from either a supermarket or a hypermarket were found to purchase from 9.3% - 20.8% of their households fresh fruit and vegetables from the traditional markets (Table 9.21).

Table 9.21: The proportion of the total amount of the fresh fruit and vegetables purchased from the following retail outlet

	Supermarket	Hypermarket	Wet market/ Fresh market	Farmers market	Night market	Wholesale market	Grocery store/mini market
Supermarket	64.4	17.3	16.4	22.5	18.1	14.7	13.1
Hypermarket	16.6	66.7	17.2	14.9	14.8	13.1	13.5
Wet market/ Fresh market	18.6	12.6	64.2	12.9	14.7	13.0	13.1
Farmers market	9.3	12.9	12.1	56.2	15.5	13.3	21.0
Night market	14.1	20.8	11.3	17.1	64.4	19.3	18.9
Wholesale market	13.8	17.5	20.0	16.7	8.2	64.0	11.8
Grocery store/ mini market	18.6	17.2	11.3	20.0	15.6	20.0	59.7

Respondents who purchased the majority of fresh fruit and vegetables from a wet market/fresh market (64.2%) were also more likely to purchase from wholesale markets (20.0%), hypermarkets (17.2%) and supermarkets (16.4%).

Respondents who purchased the majority of the fresh produce consumed in their household from a farmers market (56.2%), purchased 22.5% of their fresh fruit and vegetables from supermarkets and/or from grocery stores (20.0%).

Respondents who purchased the majority of fresh produce from a night market (64.4%) were also more likely to purchase from supermarkets (18.1%), grocery stores/mini markets (15.6%), and/or farmers markets (15.5%).

For those respondents who purchased the majority of the fresh produce consumed from a wholesale market (64.0%), grocery stores/mini markets (20.0%) and night markets (19.3%) provided the second most important source of fresh fruit and vegetables.

Similarly, those respondents who purchased the majority of their fresh fruit and vegetables from grocery stores (59.7%) also purchased fresh fruit and vegetables from farmers markets (21.0%) and/or the night market (18.9%).

In making their decision to purchase fresh fruit and vegetables from a retail store, most respondents (83.3%) mentioned freshness, followed by price (73.7%) (Table 9.22).

Other variables most frequently cited included variety (27.0%), quality (25.6%) and cleanliness (23.3%). The concept of convenience was also cited by 19.6% of respondents who considered proximity to their place of residence. Another group of variables most often cited by respondents included a comfortable environment (12.9%) and easy access to the retail outlet (7.8%).

Freedom from pests and diseases (1.5%), Halal (1.1%), and safe to eat (0.7%) were among the least frequently cited variables respondents considered in making their decision to purchase fresh fruit and vegetables from a retail store. Again, this does not indicate that respondents were less concerned about food safety or issues related to Halal when purchasing fresh fruit and vegetables, but rather that respondents implicitly assumed that the fresh produce available from any retail outlet were safe and Halal to eat. Given that fresh fruit and vegetables are generally Halal, it is understandable to find that Halal was one of the least cited variables considered by respondents when purchasing fresh produce.

Table 9.22: Variables respondents consider in their decision to purchase fresh fruit and vegetables from their most preferred retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	135	64	22	4		225	83.3
Price	52	78	46	17	6	199	73.7
Variety/a lot of choices	14	4	29	20	6	73	27.0
Quality	13	30	10	10	6	69	25.6
Cleanliness	13	22	17	8	3	63	23.3
Location – near my house/office	13	6	12	12	10	53	19.6
Comfortable environment	6	5	11	6	7	35	12.9
Easy access	1	5	8	4	3	21	7.8
Texture	2	9	7	2		20	7.4
Knowledgeable and friendly vendors	2		3	9	3	17	6.3
Display area products were arranged in a good order	1	3	4	5	4	17	6.3
Taste	3	3	5	3	3	17	6.3
Colour	3	6	3		1	13	4.8
I can self-select		2	3	6	2	13	4.8
One stop center for grocery	4	3		1	3	11	4.1
Quantity	1		4	5		10	3.7
Nicely packed	1	4	1	2	1	9	3.3
Origin of fruit and vegetables		4	1	1	2	8	2.9
Size		1	3	3	1	8	2.9
Trading hours	3			1	3	7	2.6
Freedom from chemicals		1	2		3	6	2.2
Promotion		2	2	1		5	1.9
Label			1	3	1	5	1.9
Freedom from pests and diseases		1	1	1	1	4	1.5
Intended use	2	1			1	4	1.5
Halal	1	2				3	1.1
Safe to eat				1	1	2	0.7
Smell					1	1	0.4
	270						

When respondents were asked to indicate how important various items were in their decision to purchase fresh fruit and vegetables, a total of sixteen variables were found to be equally important in influencing the respondents' decision to purchase from a retail store (Table 9.23).

Table 9.23: Importance of variables influencing respondents' criteria of preferred retail outlet

	Mean	SD
Freshness	5.77[a]	0.58
Cleanliness	5.66[a]	0.65
Good quality produce	5.64[a]	0.66
A wide range of fresh produce	5.51[a]	0.78
I can self select	5.45[a]	0.83
Value for money	5.44[a]	0.79
A wide range of other fresh products	5.41[a]	0.82
All product is clearly priced	5.37[a]	0.86
Competitive price	5.37[a]	0.88
Product easily accessible	5.30[a]	0.86
Product is clearly labelled	5.29[a]	0.89
Good customer service/friendly staff	5.25[a]	0.87
Quick/fast checkout	5.23[a]	0.99
Fresh produce is refrigerated	5.16[a]	1.02
A lot of sections (wet and dry sections)	5.14[a]	1.03
Everything all under one roof	5.14[a]	1.02
Well organised/well laid out	5.10[b]	0.95
Easy parking	5.08[b]	1.06
Offer special prices or discounts	5.06[b]	1.02
Near my house/work place	4.95[c]	1.03
Knowledgeable staff	4.90[c]	1.05
Trading hours	4.89[c]	1.08
Origin of the product is clearly displayed	4.84[d]	1.19
Attractive display/presentation	4.77[e]	1.08
Local produce	4.74[f]	1.15
Trolley and baskets are provided	4.72[g]	1.38
Loyalty/always shop there	4.67[g]	1.15
Opportunity to bargain on price	4.47[h]	1.41
Return/refund policy	4.37[i]	1.34
Sample of the product	4.35[i]	1.25
Air-conditioned	4.22[j]	1.51
Credit facilities	3.88[k]	1.56
Advertising on radio/tv/newspaper	3.74[l]	1.42
Cater for kids	3.63[m]	1.54
Shopping points/loyalty programs	3.46[n]	1.52

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

The sixteen variables were grouped under four themes; the physical attributes of the fresh fruit and vegetables (freshness, clean and good quality produce); convenience (a wide range of fresh produce, I can self select, a wide range of other fresh products, all product is clearly priced and labelled, product is easily accessible, a quick fast checkout, a lot of sections and everything under one roof); value (value for money and competitive price), and the characteristics of the retail outlet (good customer service/friendly staff and fresh produce is refrigerated).

Those variables which were of least importance to respondents when purchasing fresh fruit and vegetables were credit facilities, advertising in the print or electronic media, catering for the kids and shopping points/loyalty programs.

Principal component analysis revealed four factors which explained 64.6% of the variance observed in the respondents' decision to purchase fresh fruit and vegetables from a retail store (Table 9.24).

Table 9.24: Factors influencing respondents' criteria of preferred retail outlet

Variable	Factor			
	1	2	3	4
A wide range of fresh produce	0.846			
A wide range of other fresh produce	0.824			
Product is easily accessible	0.761			
All product is clearly priced	0.758			
Product is clearly labelled	0.726			
Good quality produce	0.717			
I can self select	0.703			
Advertising on radio/tv/newspaper		0.813		
Shopping points/loyalty programs		0.772		
Cater for kids		0.755		
Air-conditioned		0.714		
Return/refund policy		0.642		
Credit facilities		0.636		
Easy parking			0.767	
Everything all under one roof			0.721	
Near my house/work place			0.608	
Competitive price				0.778
Value for money				0.663
Opportunity to bargain on price				0.630
Eigenvalue	7.295	2.550	1.306	1.113
Percent variance	24.69	18.84	11.15	9.87
Cumulative variance	24.69	43.53	54.68	64.55
Cronbach's alpha	0.906	0.851	0.714	0.643
Factor mean	5.43[a]	3.88[c]	5.06[b]	5.09[b]

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 7.29, captured seven items and accounted for 24.7% of the variance. Collectively, these items were described as "perceived risks". In order to minimise risk, consumers preferred to select from a wide range of fresh produce, to have access to a wide range of other fresh produce and for the product to be easily accessible within their preferred retail outlet. Consumers also

wished to reduce the financial risk. This included product that was clearly priced and clearly labelled, the availability of good quality produce and the opportunity to self select the products. The Cronbach's alpha for this factor was 0.91, indicative of a very high reliability. In making the decision to purchase fresh fruit and vegetables from a retail outlet, this factor was ranked the most important criteria by respondents.

Factor Two captured six items and had an Eigenvalue of 2.55. The Cronbach's alpha for this factor was 0.85. The six items described the "attributes of modern retail outlets" which comprised several promotional items (advertising in the media, shopping points/loyalty programs), a comfortable shopping atmosphere for the whole family, and return and credit facilities in order to attract more consumers to shop there. This factor however, was the least important construct in the respondents' decision to buy fresh fruit and vegetables.

Factor Three, with an Eigenvalue of 1.31, had three items and accounted for 11.2% of the variance. The Cronbach's alpha for this factor was 0.71. Items in Factor Three described the "convenience factors" consumers search for when doing their shopping. It was comprised of items such as the accessibility of easy parking, the availability of most grocery products in the same shopping precinct, and the location of the retail outlet. Factor Three and Factor Four was considered equally important by respondents and were the second most important construct in making their decision to purchase fresh fruit and vegetables from a retail outlet.

Factor Four, with an Eigenvalue of 1.11 captured three items and accounted for 9.8% of the variance. The three items described the "value" which comprised competitive price, value for money, and the opportunity to bargain on price. The Cronbach's alpha for this factor was 0.64.

In thinking about the quality criteria respondents most often used in their decision to purchase fresh fruit and vegetables, freshness (93.2%) was the most frequently cited variable (Table 9.25).

Table 9.25: Variables respondents consider when they think about the quality of fresh fruit and vegetables

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	159	62	23	11	5	260	93.2
Price	29	33	25	15	12	114	40.9
Cleanliness	19	35	17	10	6	87	31.2
Nutrition	8	14	19	9	5	55	19.7
Freedom from chemicals	11	15	10	10	1	47	16.8
Safe to eat	2	8	16	12	4	42	15.1
Texture	12	11	8	8	3	42	15.1
Quality	10	10	6	3	5	34	12.2
Colour	8	12	6	1	6	33	11.8
Size/Shape	5	8	11	7		31	11.1
Taste	3	10	10	4	3	30	10.8
Nicely packed	2	6	7	6	8	29	10.4
Country-of-origin	3	6	9	3	1	22	7.9
Knowledgeable and friendly vendors	1	1	5	3	4	14	5.0
Freedom from pests	2	1	2	4	4	13	4.7
Halal	2	4	5	1		12	4.3
Smell	2	7	2	1		12	4.3
Organic		8	1		1	10	3.6
I can self select			4	4	1	9	3.2
Label		1	1	2		4	1.4
Location		1	2		1	4	1.4
Promotion			1	1	1	3	1.1
Product is refrigerated	1			1		2	0.7
Intended use		1			1	2	0.7
Easy parking				1		1	0.4
	279						

Price (40.9%) was the second most frequently cited variable, followed by cleanliness (31.2%). Quality of fresh produce were also associated with such variables as nutrition (19.7%), freedom from chemicals (16.8%), safe to eat (15.1%), and other variables which described the physical attributes of the product such as texture (15.1%), colour (11.8%), and size/shape (11.8%). Several respondents also mentioned quality (12.2%), taste (10.8%) and nicely packaged (10.4%) as variables which were indicative of the quality of fresh fruit and vegetables.

Halal (4.3%), smell (4.3%), organic (3.6%) and the opportunity to self select (3.2%) were among the most infrequently cited variables when respondents thought about the quality of fresh fruit and vegetables.

When asked to indicate the extent to which they agreed with sixteen quality statements associated with purchasing fresh fruit and vegetables from a retail store, seven variables were identified by respondents as having the highest measure of agreement (Table 9.26).

Table 9.26: The meaning of quality of fresh fruit and vegetables

Quality means that the product…	**Mean**	**SD**
is fresh	5.81[a]	0.53
is safe to eat	5.74[a]	0.62
is free from chemical residues	5.59[a]	0.77
is nutritious	5.57[a]	0.76
I will not be disappointed when I eat the product	5.47[a]	0.83
is good value for money	5.46[a]	0.83
is free from pests and diseases	5.46[a]	0.86
I will be able to use most if not all of the product I have purchased	5.36[b]	0.89
will taste good	5.35[b]	0.90
is free from dirt and soil	5.23[c]	0.94
has been produced in a way that is good for the environment	5.15[d]	1.00
will have a long shelf life	4.97[e]	1.08
was produced in a way that did not endanger the farmers	4.89[f]	1.19
looks attractive	4.75[g]	1.16
is attractively packaged	4.59[h]	1.18
will be more expensive	3.51[i]	1.44

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

For most respondents, good quality meant that the fruit and vegetables purchased were fresh, safe to eat, free from chemical residues, free from pests and diseases, nutritious, were good value for money and the respondent was unlikely to be disappointed with the purchase after consuming the product.

Attractive packaging and a high price were the two variables that were least often associated with quality.

Principal component analysis revealed three factors which collectively explained 68.6% of the variance (Table 9.27).

Table 9.27: Factors influencing quality of fresh fruit and vegetables

Quality means that the product…	Factor		
	1	**2**	**3**
is free from chemical residues	0.810		
is free from pests and diseases	0.809		
is safe to eat	0.722		
is nutritious	0.676		
I will not be disappointed when I eat the product		0.779	
is good value for money		0.771	
I will be able to use most if not all of the product I have purchased		0.721	
looks attractive			0.873
is attractively packaged			0.871
Eigenvalue	3.843	1.299	1.031
Percent variance	27.48	22.57	18.55
Cumulative variance	27.48	50.05	68.59
Cronbach's alpha	0.800	0.720	0.773
Factor mean	5.59[a]	5.43[a]	4.67[b]

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 3.84 captured four items and accounted for 27.5% of the variance. Items in Factor One described the "food safety issues" such as freedom from chemical residues, freedom from pests and diseases, safe to eat and nutritious. The Cronbach's alpha for this factor was 0.80. Not unexpectedly, this factor was the most influential in determining the respondents' perceptions of the quality of the fresh fruit and vegetables offered for sale.

Factor Two captured three items and had an Eigenvalue of 1.29. These three items described the "value for money" of the fresh produce purchased. The Cronbach's alpha for this factor was 0.72 and it explained 22.6% of the variance. Similar to Factor One, this factor was the most influential in determining the respondents' perceptions of the quality of the fresh fruit and vegetables they purchased.

Factor Three included two items that collectively captured the "utility of packaging". It accounted for 18.6% of the variance. The Cronbach's alpha for this factor was 0.77. Regardless of the benefits of packaging, this factor was the least influential when respondents considered the quality of the fresh fruit and vegetables available in a retail store.

Most respondents (81.9%) recognised that there was a difference in the quality of the fresh fruit and vegetables available from modern retail outlets and traditional markets (Table 9.28).

Table 9.28: Are there any difference in the quality of fresh fruit and vegetables

	N	%
Yes	231	81.9
No	51	18.1
	282	100.0

More than one half of the respondents (56.7%) believed that supermarkets and hypermarkets offered the best quality fresh fruit and vegetables (Table 9.29).

Table 9.29: Which retail outlets offer the best quality of fresh fruit and vegetables

	N	%
Modern retail outlets	160	56.7
Traditional markets	122	43.3
	282	100.0

The majority of respondents (78.5%) cited freshness as that variable which was best able to differentiate between the quality of the fresh fruit and vegetables offered by the traditional markets and the modern retail outlets (Table 9.30).

Price (25.2%) was the second most frequently cited variable that differentiated between the quality of the fresh produce offered by traditional and modern retail formats, followed by cleanliness (21.9%).

The display area (17.8%), knowledgeable and friendly vendors (17.0%), nicely packaged (17.0%), the variety (14.8%), texture (11.5%), and the fact that the fresh fruit and vegetables were refrigerated (11.1%) provided a third group of variables.

Table 9.30: Variables respondents consider that the quality of fresh fruit and vegetables is better from another retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	123	51	20	10	8	212	78.5
Price	10	21	14	20	3	68	25.2
Cleanliness	19	25	7	4	4	59	21.9
Display area	14	13	14	5	2	48	17.8
Knowledgeable and friendly vendors	18	20	5	1	2	46	17.0
Nicely packed	16	16	8	5	1	46	17.0
Variety/a lot of choices	8	13	8	2	9	40	14.8
Texture	6	13	8	4		31	11.5
Fruit and vegetables are refrigerated	12	9	7	2		30	11.1
Comfortable environment	14	3	2	1	2	22	8.1
Country-of-origin	3	11	4	1	1	20	7.4
Freedom from chemicals/preservative	4	3	9	3	1	20	7.4
Quality	8	1	3	2	1	15	5.6
I can self select	3	3	3	4		13	4.8
Label	1	5	5	2		13	4.8
Colour	6	3	2	1		12	4.4
Safe to eat	1		3	3	3	10	3.7
Taste	1	5	2	1		9	3.3
Freedom from pest and diseases	1		3	2	1	7	2.6
Organic		1	1		1	3	1.1
Size		1			2	3	1.1
Nutrition			1	1	1	3	1.1
I can also buy other products here	1				1	2	0.7
Smell				1	1	2	0.7
Quantity	1	1				2	0.7
Easy parking		1				1	0.4
Promotion			1			1	0.4
Trading hours		1				1	0.4
	270						

Other variables considered by respondents which enabled them to differentiate between the quality of the fresh fruit and vegetables offered by different retail stores included a comfortable environment (8.1%), country-of-origin (7.4%) and freedom from chemicals and preservatives (7.4%).

Respondents were then asked to indicate the extent to which they agreed with 21 statements about their preferred choice of retail outlet when purchasing fresh fruit and vegetables. On a scale of 1 to 6, where 1 was “I disagree a lot” and 6 was “I

agree a lot", five variables were afforded similar measures of agreement (Table 9.31).

Table 9.31: Respondents level of agreement/disagreement with each of these statements

	Mean	SD
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.19[a]	0.99
Products in the supermarkets are clearly priced	5.02[a]	0.89
Consumers can bargain on price in wet markets	4.97[a]	1.14
Fresh produce is displayed better in supermarkets	4.79[a]	1.02
Supermarkets operate everyday while traditional markets operate only on certain days of the week	4.68[a]	1.35
The children feel comfortable when I shop at supermarkets	4.53[b]	1.30
Supermarkets offer a wider range of fresh food	4.53[b]	1.26
Retailers in the traditional market are more knowledgeable about the products they sell	4.42[b]	1.21
Supermarkets offer better customer service than the traditional markets	4.32[c]	1.18
I prefer to buy my fresh fruit and vegetables from the same vendor in the traditional markets	4.29[c]	1.34
Traditional markets offer better quality produce at a much cheaper price	4.28[c]	1.29
Fruit and vegetables are fresher in traditional markets	4.28[c]	1.22
I cannot buy the other household items I need if I shop at traditional markets	4.26[c]	1.32
The quality of the fresh produce available is better in supermarkets	4.25[c]	1.24
Traditional markets seldom have a good or clean environment	4.23[c]	1.27
I buy my other household goods from supermarkets but I buy my fruit and vegetables from traditional markets	4.05[d]	1.38
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	3.88[e]	1.30
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.69[f]	1.31
I go to supermarkets because of the shopping points I get	3.59[g]	1.57
At traditional markets, the vendors remember my name	3.51[g]	1.58
I often meet my friends when I shop at traditional markets	3.29[h]	1.36

where 1 is "I disagree a lot" and 6 is "I agree a lot"

those items with the same superscript are not significantly different at p = 0.05

Those variables which were the most highly rated described the perceived risks (products are clearly priced, fresh produce is better displayed, and trading hours), the convenience associated with shopping at a modern retail outlet, and the ability to bargain on price in traditional markets.

In order to group respondents according to their preferred choice of retail store when purchasing fresh fruit and vegetables, cluster analysis was again applied (Table 9.32). On this occasion, a three cluster solution was considered to be optimal.

Table 9.32: Respondents level of agreement/disagreement with each of these statements according to cluster

	Cluster 1		Cluster 2		Cluster 3	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
The quality of the fresh produce available is better in supermarkets	5.35[a]	0.93	4.02[b]	0.99	3.80[b]	1.23
Supermarkets operate everyday while traditional markets operate only on certain days of the week	5.47[a]	0.74	4.21[b]	1.31	4.64[b]	1.47
Consumers can bargain on price in wet markets	5.26[a]	0.85	4.24[b]	1.23	5.42[a]	0.90
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.84[a]	0.37	4.92[b]	1.01	5.06[b]	1.04
I often meet my friends when I shop at traditional markets	2.97[b]	1.28	2.65[b]	1.19	4.05[a]	1.23
Supermarkets offer a wider range of fresh food	5.65[a]	0.55	4.03[b]	0.92	4.29[b]	1.44
At traditional markets, the vendors remember my name	3.31[b]	1.53	2.47[c]	1.22	4.54[a]	1.19
I cannot buy the other household items I need if I shop at traditional markets	4.81[a]	1.34	3.68[b]	1.29	4.46[a]	1.19
I go to supermarkets because of the shopping points I get	4.56[a]	1.35	2.84[c]	1.34	3.69[b]	1.53
The children feel comfortable when I shop at supermarkets	5.42[a]	0.95	4.11[b]	1.21	4.34[b]	1.37
Traditional markets seldom have a good or clean environment	5.03[a]	1.19	3.74[b]	1.05	4.17[b]	1.29
Supermarkets offer better customer service than the traditional markets	5.16[a]	0.87	3.76[c]	0.99	4.29[b]	1.21
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.27[b]	1.45	3.03[b]	0.95	4.41[a]	1.11
I buy my other household goods from supermarkets but I buy my fruit and vegetables from traditional markets	3.00[c]	1.32	3.56[b]	1.05	4.99[a]	0.97
Traditional markets offer better quality produce at a much cheaper price	3.53[b]	1.35	3.77[b]	1.06	5.13[a]	0.92
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	4.32[a]	1.45	3.31[b]	1.13	4.14[a]	1.22

Fresh produce is displayed better in supermarkets	5.47[a]	0.67	4.17[c]	0.93	4.93[b]	0.97
Fruit and vegetables are fresher in traditional markets	3.37[c]	1.15	3.82[b]	0.93	5.19[a]	0.85
I prefer to buy my fresh fruit and vegetables from the same vendor in the traditional markets	3.39[b]	1.35	3.61[b]	1.04	5.34[a]	0.74
Products in the supermarkets is clearly priced	5.55[a]	0.64	4.69[b]	0.97	4.97[b]	0.79
Retailers in the traditional market are more knowledgeable about the products they sell	3.99[b]	1.29	3.78[b]	0.98	5.13[a]	0.93

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

Cluster 1 described "modern retail shoppers". This group had a higher mean score on convenience. They most valued the diversity of the fresh food available in supermarkets, the products being clearly priced, the importance of extended trading hours and the provision of a comfortable environment for children.

Cluster 2 described "transient shoppers". Shoppers in this group were found not to be loyal to any retail outlet. They did not demonstrate any preference for a specific retail store at which to purchase these products suggesting that they would buy from whichever store was the most convenient whenever they needed to purchase fresh fruit and vegetables. The mean scores for this group were generally found to be in the mid-point of the scale.

Cluster 3 described "traditional market shoppers". This group scored highly on the opportunity to bargain on price and loyalty to the same vendor each time they purchased fresh fruit and vegetables. They believed that purchasing from a traditional market represented much better value, as good quality fresh produce was offered at a much lower price. Furthermore, retailers in the traditional markets were more knowledgeable about the products they sold.

To verify the findings, a cross-tabulation was undertaken to examine any relationship between the clusters and the place of purchase.

Respondents from Cluster 1 purchased most of their fresh fruit and vegetables from supermarkets (38.0%) and hypermarkets (36.9%) (Table 9.33).

Table 9.33: Place of purchase by cluster

	Cluster 1		Cluster 2		Cluster 3		Total
	n	%	n	%	n	%	
Supermarket	19	38.0	20	40.0	11	22.0	50
Hypermarket	27	36.9	28	38.4	18	24.7	73
Wet market/Fresh market	8	14.8	13	24.1	33	61.1	54
Farmers market	2	12.5	3	18.8	11	68.8	16
Night market	5	10.9	16	34.8	25	54.3	46
Wholesale market	0	0.0	8	66.7	4	33.3	12
Grocery store/mini-market	1	7.7	7	53.8	5	38.5	13
Total	62		95		107		264

[Pearson chi-square =48.01, df =12, p = 0.000]

Cluster 2 involved a mix of respondents who purchased from both the modern retail outlets and traditional markets. Some 66.7% of respondents in Cluster 2 purchased the majority of the fresh fruit and vegetables they consumed from the wholesale market, 53.8% from the grocery store/mini-market, 40.0% from supermarkets and 38.4% from hypermarkets.

Respondents in Cluster 3 favoured the traditional markets as 68.8% of respondents purchased the majority of the fresh produce they consumed from farmers market, 61.1% from wet market/fresh market and 54.3% from the night market.

Further confirmation was achieved when a cross-tabulation was used to differentiate the variables which best described the quality of the fresh fruit and vegetables purchased according to the premises from which shoppers purchased the majority of their fresh fruit and vegetables (Table 9.34).

While freshness was the most frequently cited variable for all three clusters, it was the most influential for Cluster 3 (97.2%). Similarly, price (31.8%) and knowledgeable and friendly variables (36.4%) were more frequently cited.

For Cluster 1, cleanliness (35.5%), nicely packed (29.0%), the display area (25.8%), the variety of choice (22.6%) and fruit and vegetables that were refrigerated (20.9%) were clearly indicative of those shoppers who preferred to purchase fresh fruit and vegetables from modern retail outlets. Additionally, variables such as labels (9.7%), safe to eat (9.7%) and organic (3.2%) were other indicators which

encouraged shoppers to purchase their fresh fruit and vegetables from either a supermarket or hypermarket.

Table 9.34: Clusters by which variables respondents consider to differentiate the quality of fresh fruit and vegetables is better from another retail outlet

	Cluster 1 (62)		Cluster 2 (95)		Cluster 3 (107)	
	N	%	N	%	N	%
Freshness	48	77.4	50	52.6	104	97.2
Price	14	22.6	19	20.0	34	31.8
Cleanliness	22	35.5	24	25.3	9	8.4
Display area	16	25.8	12	12.6	20	18.7
Knowledgeable and friendly vendors	3	4.8	1	1.1	39	36.4
Nicely packed	18	29.0	15	15.8	10	9.3
Variety/a lot of choices	14	22.6	10	10.5	12	11.2
Texture	11	17.7	5	5.3	12	11.2
Fruit and vegetables are refrigerated	13	20.9	14	14.7	1	0.9
Comfortable environment	9	14.5	10	10.5	2	1.9
Country-of-origin	1	1.6	5	5.3	11	10.3
Freedom from chemicals/preservative	2	3.2	2	2.1	15	14.0
Quality	4	6.5	4	4.2	5	4.7
I can self select	3	4.8	4	4.2	4	3.7
Label	6	9.7	4	4.2	3	2.8
Colour	2	3.2	5	5.3	3	2.8
Safe to eat	6	9.7	2	2.1	1	0.9
Taste	1	1.6	3	3.2	4	3.7
Freedom from pests and diseases	1	1.6	1	1.1	4	3.7
Organic	2	3.2	1	1.1	0	0.0
Size	2	3.2	0	0.0	1	0.9
Nutrition	1	1.6	0	0.0	2	1.9
I can also buy other products here	0	0.0	2	2.1	0	0.0
Smell	1	1.6	0	0.0	1	0.9
Quantity	0	0.0	0	0.0	2	1.9
Easy parking	0	0.0	1	1.1	0	0.0
Promotion	1	1.6	0	0.0	0	0.0
Trading hours	0	0.0	1	1.1	0	0.0

Among the most frequently cited variables which differentiate the quality of the fresh fruit and vegetables available from a retail outlet, respondents in Cluster 2 considered freshness (52.6%), cleanliness (25.3%) and price (20.0%). Given that they do not have any preferred place of purchase, respondents in Cluster 2 may go to any retail outlet when they need to purchase fresh fruit and vegetables.

Analysis of variance was performed to investigate the relationship between the factors influencing the respondents' choice of preferred retail outlet and the clusters (Table 9.35). Results indicate that there were significant differences for Factor One and Factor Four.

Table 9.35: Results of principal component analysis (criteria of preferred retail outlet) by cluster

	Cluster 1		Cluster 2		Cluster 3	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Factor 1:Perceived risk	5.65[a]	0.48	5.03[b]	0.81	5.59[a]	0.44
Factor 2:Modern retail outlet	4.32[a]	0.97	3.44[b]	1.11	3.93[a]	1.11
Factor 3:Convenience	5.27[a]	0.75	4.81[b]	0.91	5.11[a]	0.76
Factor 4:Value	5.13[a]	0.77	4.73[b]	0.88	5.39[a]	0.58

Factor One was found to be significantly more important for modern retail and traditional market shoppers. Both shoppers perceived that their preferred retail outlet could offer better quality fresh fruit and vegetables with minimal risks involved.

Factor Four was also found to be equally important for modern retail and traditional market shoppers. Both clusters perceived that their preferred retail outlets could offer the best value when purchasing fresh fruit and vegetables.

Subsequently, another analysis of variance was performed to investigate the relationship between the factors influencing the quality of fresh fruit and vegetables and the clusters (Table 9.36). Results indicate that there were significant differences for Factor One and Factor Two.

Table 9.36: Results of principal component analysis (quality of fresh fruit and vegetables) by cluster

	Cluster 1		Cluster 2		Cluster 3	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Factor 1: Food safety issues	5.71[a]	0.51	5.36[b]	0.71	5.67[a]	0.53
Factor 2: Value for money	5.59[a]	0.53	5.17[b]	0.79	5.54[a]	0.61
Factor 3: Utility of packaging	5.06[a]	1.05	4.31[b]	1.01	4.77[a]	0.92

Factor One was found to be significantly more important for modern retail and traditional market shoppers. Respondents belonging to Cluster 1 and Cluster 3

perceived that their preferred retail outlet could offer better quality fresh produce which was free from chemical residues, free from pests and diseases, nutritious and thus, safe to eat.

Factor Two was also found to be significantly more important for modern retail and traditional market shoppers. Respondents in both clusters perceived that the purchase of fresh fruit and vegetables from their preferred retail outlet represented good value for money.

In a similar manner to the fresh meat survey, the socio-demographic variables were tested against the clusters. The results were found not to be significantly different by cluster.

9.4 Part Three: Synthesis

The findings indicated that there were differences between respondents preferred place of purchase for fresh/chilled meat and fresh fruit and vegetables. A total of 66.4% of respondents were reported to choose the traditional markets whereas only 53.5% preferred to purchase fresh fruit and vegetables from the traditional market. This suggests that Malaysian consumers prefer to purchase their fresh/chilled meat from traditional markets.

Glitsch (2000) revealed how consumers in countries such as Germany, Ireland, Italy and Spain prefer to purchase their fresh meat (beef, pork and chicken) from traditional butchers. Similarly, the majority of grocery shoppers in Taiwan continue to visit the traditional markets to purchase fresh meat (Hsu and Chang 2002). Conversely, in the UK and Sweden, megamarts, hypermarkets or supermarkets account for the majority of retail meat sales (Glitsch 2000).

In Australia, McKinna et al. (2007) reported that 51.0% of Australians purchase their fresh vegetables from supermarkets on a weekly basis. However, on several occasions, they purchase additional fruit and vegetables from fresh markets or fruit shops when required. Similarly in Malaysia, respondents who purchase their fresh fruit and vegetables from modern retail outlets may also purchase some fresh

produce from other retail outlets. This occurs because respondents want to utilise and cook produce that is fresh and the variety of fresh produce available from retail outlets may differ from time to time.

Nevertheless, the place of purchase could be linked to car ownership. According to Kari and Rasiah (2008), the Klang Valley has the highest rate of urban growth and car ownership compared to other regions in Malaysia. Car ownership in the Klang Valley has increased from 546 vehicles per 1,000 persons in 1996 to 994 vehicles per 1,000 persons in 2002 (Malaysia 2004). It was confirmed by Rahman (1995) that on average, there will be more than one car in every household in Kuala Lumpur by 2000. As a result of this, consumers in the Klang Valley are more mobile, which gives them the opportunity to shop around for the best quality and the best value food.

In terms of the frequency of purchase, some 66.2% of the respondents purchased fresh/chilled meat at least one time per week compared to 68.7% of respondents from the fresh fruit and vegetables survey. Without stating the obvious, this suggests that the majority of respondents shop for food one time per week. However, that does not preclude them nor does it stop them from topping up where they either run out or have an unanticipated need. In part, the frequency with which respondents purchase fresh food could be related to refrigerator ownership. According to Mahlia et al. (2004), almost every household in Malaysia has a refrigerator-freezer. Leng et al. (2002) noted that refrigerator ownership had increased from 48.1% in 1992-1996 to 79.8% in 1997-2000. It was estimated by Saidur et al. (2007) that more than 6,935,000 Malaysians have a refrigerator-freezer at home and by 2013, the number will have increased to 8,395,000. Refrigerators are increasingly being considered as a household necessity to keep perishable food fresh particularly in a country with hot and humid weather such as Malaysia (Leng et al. 2002). A high penetration of refrigerator ownership, decreases the number of shopping trips to purchase food. Veeck and Veeck (2000) confirm that refrigerator ownership was associated with the frequency of food shopping in China.

In making their decision to purchase fresh/chilled meat and fresh fruit and vegetables from their preferred retail outlet, freshness and price were the two most frequently cited variables used by respondents (Table 9.37).

Table 9.37: Variables respondents consider in their decision to purchase fresh food from their most preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (85.2%)	Freshness (83.3%)
Price (69.6%)	Price (73.7%)
Cleanliness (54.0%)	Variety/a lot of choices (27.0%)
Halal (39.2%)	Quality (25.6%)
Variety/a lot of choices (25.2%)	Cleanliness (23.3%)

For the purchase of fresh meat, freshness was perceived differently according to the place of purchase. Goldman and Hino (2005) described the freshness of the meat available from the traditional markets as “warm” (just recently being killed) and not chilled or frozen. Hsu and Chang (2002) explained freshness by the manner in which meat was being presented for sale in the traditional markets. Consumers were given the opportunity to touch the meat to determine its freshness. Conversely, the meat available in most modern retail outlets is pre-cut and pre-packaged, and displayed in chillers or freezers (Hsu and Chang 2002; Krystallis et al. 2007). Umberger et al. (2003) added that the freshness of the meat purchased from supermarkets was determined by the label attached to the product. According to Bonne and Verbeke (2006), the label can provide information such as the slaughter date, the date the meat was processed and the origin of the meat. In the absence of a label, consumers may be assisted by their preferred butcher in determining the freshness of the meat (Becker et al. 2000).

Goldman et al. (1999) demonstrated that fresh fruit and vegetables, and other fresh food items such as meat and fish were perceived to be fresher and cheaper in most traditional markets in Hong Kong than those purchased in supermarkets. The findings of this study were supported by Berdegue et al. (2005), who demonstrated that the price of fresh fruit and vegetables in modern retail outlets were 15.0% to 60.0% above traditional retailers. Although the price of several meat cuts were found to be cheaper in the traditional markets, Hsu and Chang (2002) believed that shoppers who patronise traditional retailers may not be totally driven by lower

prices. According to Humphrey (2007), modern retailers lose out to traditional retailers because of the consumers' perceptions of both freshness and the lower price of fresh meat, fruit and vegetables.

Cleanliness was one of the other most frequently cited variables reported by respondents as influencing their decision to purchase fresh food. Cleanliness was seen as presenting a significant barrier for traditional retail outlets to compete with modern retailers. Generally, most traditional markets are described as wet, dirty and smelly, over-crowded, poorly ventilated and often inhabited by vermin (Goldman et al. 1999; Muharam 2001; Hsu and Chang 2002; Bougoure and Lee 2009). Cleanliness was important for most Central American consumers. Apparently, they assumed that the fresh fruit and vegetables being offered in a clean and tidy supermarket were safer to eat compared to the fresh produce available from a dirty and disorganised market (Berdegue et al. 2005). However, Suryadarma et al. (2010) revealed how cleanliness was seen to be one of the least important variables for traditional retailers in Indonesia to attract more shoppers. *Pasar Tani Mega* or Mega-Agri marts were introduced by the Malaysian Ministry of Agriculture and Agro-Based Industry in an effort to replace traditional markets with more modern facilities that offered a more hygienic and conducive environment for shoppers (Muda n.d.). According to Ibrahim (2009), vendors must operate a clean and neat stall and be appropriately attired. Not only has this attracted more locals, but foreign tourists have also been found to be visiting these markets. Despite the unpleasant conditions, the findings of this study reveal that many consumers will continue to purchase their fresh food from traditional markets.

Variety was another variable cited by respondents in their decision to purchase fresh food from a retail store. This finding concurs with Baltas and Papastathopoulou (2003), which revealed how the variety of merchandise determined store patronage. Modern retail outlets have an advantage in offering their shoppers not only a wider range of fresh food, but also processed, dry and packaged food (Reardon et al. 2003). Besides doing their grocery shopping, shoppers who visit modern supermarkets and hypermarkets can also shop for clothes and other non-food products. Dholakia (1999) explained how consumers enjoy the satisfaction of going shopping in modern supermarkets because they have

more choice. At the same time, consumers can experience the diversity of fresh food products and other products when visiting the traditional markets. In Hong Kong, the smaller wet markets have at least 30 stalls, whereas the larger markets may contain more than 400 (Goldman et al. 1999). Consumers can chose from a wide range of fresh fruit and vegetables, dried and preserved foods, fish and seafood, meat and poultry, and other cooked food. Similarly in Malaysia, the *Pasar Tani Mega*, offer consumers a variety of choice including products such as fresh chicken and beef, fish, prawns, crabs, potted plants and flowers, toys, clothes, health products like traditional herbs, frozen food, traditional cakes and ready-to-eat meals (*Pasar Tani Mega* n.d.).

Halal was among the most frequently cited variables by respondents when purchasing fresh/chilled meat. However, this variable was seldom cited when respondents spoke about purchasing fresh fruit and vegetables. In relation to food, Halal foods are permissible for consumption under Islamic dietary regulations (Che Man and Selamat 2005). Halal is most commonly associated with the consumption of meat and the manner in which the animal has been slaughtered. This has an immediate impact on whether it is both safe to eat and permissible to eat. As fresh fruit and vegetables are generally Halal, this may explain why Halal was seldom cited by respondents in their decision to purchase fresh fruit and vegetables.

In order to narrow the gap by competing with vendors from traditional markets, modern retailers tend to emphasise the quality of the fresh fruit and vegetables offered (Berdegue et al. 2005). Fresh fruit and vegetable products supplied to modern retail chains must often meet private standards which specify the quality, safety, volume and packaging (Reardon and Berdegue 2002). van der Pol and Ryan (1996) found that quality was an important attribute in influencing the consumption of fresh fruit and vegetables among consumers in the UK.

Given that quality is a qualitative attribute, researchers often experience difficulties in understanding how consumers evaluate the quality of the fresh fruit and vegetables purchased. According to Berdegue et al. (2005), quality is assessed by the consistent appearance of the fruit and vegetables in terms of size, shape, colour, firmness and ripeness. Quality was also judged by factors such as freshness,

seasonality, appearance and nutritional value (van der Pol and Ryan 1996). van der Pol and Ryan (1996) have also demonstrated how quality was associated with consumers desire to purchase fresh fruit and vegetables from supermarkets. This finding may reflect consumers' perceptions that the fresh fruit and vegetables from the corner shop are of lower quality. Given that their market share for fresh fruit and vegetables has eroded, traditional vendors in Brazil and Argentina have started to improve the quality of the fresh produce they offer for sale in order to meet the competition from supermarkets (Reardon and Berdegue 2002). Wet market traders in Chile and Malaysia were also reported to have improved the quality of the fresh produce offered for sale by upgrading the markets' facilities, improving procurement practices and adopting more hygienic practices (Reardon et al. 2005).

Apart from the top five variables most frequently cited by respondents, the location of the retail store was another variable which was found to influence the respondents' decision to purchase fresh food. Cadilhon et al. (2006) revealed that consumers in Vietnam cited the proximity of the shop and time saving, rather than emphasising freshness and price. Arnold et al. (1997) and Kim and Jin (2001) [cited in Baltas and Papastathopoulou (2003)] reported that location was the most important attribute in choosing a store. However, this criteria alone cannot explain store choice adequately (Bell et al. 1998). The impact of store choice must be analysed through fixed cost (store location) and variable cost (price and promotion), which can be further explained by analysing the concept of the basket size. For example, if a consumer shops for a large basket, he or she will prefer to visit a store with a higher fixed cost and a lower variable cost. In other words, consumers are expected to travel further in order to purchase goods at a much cheaper price. Handy and Clifton (2001) demonstrated that proximity to home was not the most important factor influencing store choice. Other factors such as the quality of products, pleasant atmosphere, wide selection and fewer crowds were equally important. However, consumers often relate store location to the concept of convenience, where some are willing to pay more because it is more convenient. In this study, respondents perceived convenience as meaning a comfortable shopping atmosphere and easy access to the store.

Loyalty to the same vendor was another frequently cited variable which influenced the respondents' decision to purchase fresh/chilled meat. This indicated that respondents valued friendly, trusted and knowledgeable vendors who provided assistance in making their decision to purchase fresh/chilled meat in traditional markets. Trust was perceived from a variety of dimensions. Muslim consumers have shown their desire to purchase fresh/chilled meat from Malay butchers in traditional markets. When purchasing from a trusted source, consumers become aware of the origin of the meat and most importantly that the meat was guaranteed Halal. This finding concurs with previous qualitative findings which demonstrate how consumers from a certain ethnicity or religion, preferred to purchase meat from vendors belonging to the same ethnicity or religion. Additionally, vendors are perceived as experts, where consumers relied on them to provide safe and high quality products (Figuie et al. 2006). Consumers who were unaware of the different cuts or portions of meats could refer to vendors who were more knowledgeable in their area. Similar to Taiwan (Hsu and Chang 2002), vendors within traditional markets in Malaysia provide personalised service for customers who required services such as chopping, slicing, skinning, de-boning and packing. Suryadarma et al. (2010) revealed that 40.0% of traditional retailers cited politeness as the main attribute of their business success. In addition, more consumer-friendly services such as giving priority to frequent customers, giving discounts, being honest, providing home delivery services and the availability to pay in instalments were employed as strategies by traditional retailers in Indonesia to become more competitive in the retail food market.

Although the service quality provided by traditional retailers was perceived as a positive approach to attract shoppers and to increase competitiveness, Bougoure and Lee (2009) demonstrated how traditional traders in Hong Kong were not providing the level of service quality demanded by consumers. In the absence of professional training, personalised service by vendors in traditional markets was unprofessional. Moreover, in the wet markets, consumers indicated that vendors did not always display personal warmth, were unfriendly and unpleasant, and did not invest the time to get to know their customers. On the other hand, training programs for employees in supermarkets were provided to ensure staff were professional, friendly, approachable and polite when dealing with consumers. Supermarkets also

outperformed wet markets in terms of responsiveness to consumers. With the advanced information technology available in most modern retail outlets, staff were able to respond promptly to consumers' requests. Having limited resources was seen as a disadvantage for traditional retailers.

Nevertheless, in Malaysia, the service quality provided by vendors in most traditional markets is seldom attainable in most modern retail stores.

Somewhat surprisingly, food safety issues such as freedom from chemicals, pests and diseases were among the most infrequently cited variables considered by respondents in their choice of retail store. A result such as this indicates that most respondents in the Klang Valley believe that the fresh food they purchase is safe to eat irrespective of the retail outlet from which the food is purchased. Given that the Malaysian government food control measures have become much stronger, the level of food safety in Malaysia is relatively better than some other ASEAN countries (Stringent steps to ensure food is safe to eat 2008). Additionally, various government agencies are working together to administer and regulate food safety along the food chain. For example, the Malaysian Ministry of Agriculture and Agro-Based Industry is responsible for monitoring the usage of pesticides, encouraging the adoption of good farming practices, and the control of food-animal disease and hygienic practices in abattoirs and farms. The Malaysian Ministry of Health ensures food safety at the processing and retail level. The Malaysian Department of Veterinary Services is responsible for the control of imported meat, poultry, eggs and milk, whereas the Malaysian Department of Agriculture is in control of the importation of fresh fruit and vegetables. According to Arshad et al. (2006), although the technology implemented in agri-food supply chains in Malaysia is not as good as many developed countries, several changes are being implemented to meet consumers' demand for high quality and safe products.

A total of sixteen variables were identified as being of equal importance in the respondents' decision to purchase fresh food from their preferred retail outlet. The variables were grouped according to theme; the physical attributes of the product (freshness, clean and good quality produce); convenience (a wide range of fresh produce, I can self select, all product is clearly priced and labelled, a wide range of

other fresh products, product is easily accessible, a quick fast checkout, a lot of sections and everything under one roof); value (value for money and competitive price), and the characteristics of the retail outlet (fresh produce is refrigerated and good customer service/friendly staff). Although the products vary greatly, in purchasing fresh/chilled meat and fresh fruit and vegetables, respondents demonstrated that similar criteria were utilised in their choice of preferred retail outlet.

Principal component analysis identified four constructs which were considered most influential in the respondents' decision to purchase fresh fruit and vegetables in a retail store. When purchasing fresh/chilled meat, an additional construct emerged which described the quality of the product (Table 9.38).

Table 9.38: Factors influencing respondents' criteria of preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Quality	Perceived risk
Perceived risk and Convenience	Convenience and value
Price	Attributes of modern retail outlets
Characteristics of a modern retail outlet	

Quality was ranked as the most important construct by respondents in their decision to purchase fresh/chilled meat from their preferred retail outlet. Quality was further explained by variables such as good quality produce, freshness and cleanliness. Similar to Wandel and Bugge (1997), Becker et al. (2000), Glitch (2000), Grunert et al. (2004) and Jabbar and Admassu (2009), freshness was among the most important attributes signifying the quality of meat. Other attributes which described the quality of fresh meat were grouped under search quality attributes (colour, price, origin) and experiential quality attributes (taste, tenderness, juiciness, healthiness and nutrition). In this study, many of these attributes were grouped under different themes or emerged as factors on their own right.

Respondents considered the concept of cleanliness to represent the quality of meat. Jabbar and Admassu (2009) revealed how cleanliness was measured by the hygiene of staff/butchers and premises. Their study demonstrated how respondents from higher income groups were more sensitive to cleanliness and perceived that better

quality meat was sold from shops that were cleaner, where staff wore clean clothes and used clean equipment to process the meat. Cleanliness of the equipment to process the meat, washing the meat using clean water and the adoption of hygienic practices by butchers can improve the microbiological quality of meat (Rao and Ramesh 1988). Consumers in Ethiopia preferred to purchase their fresh meat in supermarkets compared to traditional butchers because of the different level of cleanliness between the retail outlets (Jabbar and Admassu 2009).

As for the purchase of fresh fruit and vegetables, respondents ranked perceived risk as the most significant construct influencing their preferred choice of retail outlet. A total of seven criteria (a wide range of fresh produce, a wide range of other fresh produce, product is easily accessible, all product is clearly priced, product is clearly labelled, good quality produce and the ability to self select) described how consumers attempt to minimise the risks involved with the purchase of fresh fruit and vegetables. According to Akpinar et al. (2009), given that fresh fruit and vegetables are perishable, consumers want to purchase them in a healthy and hygienic condition, and to consume them before they perish and loose their nutritional value. Pollard et al. (2002) mentioned the importance of the availability of fresh produce within shops (a wide range of fresh produce and other fresh produce) and the physical effort required to obtain the food (product is easily accessible). Consumers preferred to visit shops which held a wide range of fresh produce. Given that fruit and vegetables are heavy and bulky, consumers needed to consider accessibility to get to and from their preferred retail outlet.

In this study, consumers were found to prefer products that were clearly priced and labelled to reduce the perceived risks that might occur when purchasing fresh fruit and vegetables from a retail outlet. Given that Malaysia imports fresh fruit and vegetables from countries such as China, India, Thailand, Australia, and the USA (Rahim 2007), Malaysian consumers valued the information provided on the label. In order to determine the quality of the produce purchased from a retail outlet, respondents from this study preferred to self-select their fresh fruit and vegetables. This finding concurs with Batt (2004), who found that Australian consumers prefer to self-select their fruit from retail shelves. Damaged, rotten or bruised fruit was

often found in pre-packed fruit and vegetables. This is one of the risks consumers try to reduce in purchasing fresh fruit and vegetables from a retail store.

Consumers in Croatia ranked five criteria according to their importance when purchasing fresh fruit and vegetables; freshness, quality, bio-production, domestic origin and product information (Kovacic et al. 2002). However, when these consumers were segmented according to clusters and their preferred place of purchase, the importance of these variables was found to vary. Practical buyers, who preferred to purchase their fresh fruit and vegetables from modern retail outlets, considered the importance of variety, product appearance, presentation and price. Traditional buyers and city market fans, who purchased most of their fresh produce from markets, valued the importance of freshness, quality and domestically grown produce. City market fans also considered the market as a place to meet friends and acquaintances. According to Pollard et al. (2002), food choice behaviour differs from person to person when purchasing fresh fruit and vegetables. Each person has their own set of criteria according to priorities, which may also include the place of purchase.

For respondents purchasing fresh/chilled meat, the perceived risk and convenience were second equal. Perceived risk was comprised of seven item measures (product easily accessible, product is clearly labelled, quick fast checkout, local produce, origin of the product is clearly displayed, trading hours and loyalty). However, only two criteria (product is easily accessible and clearly labelled) were similar to the purchase of fresh fruit and vegetables. According to McCarthy and Henson (2005), previous research about risk related with meat products has focused on consumers' perceptions of the importance of food safety and health. However, it was suggested that there were other risks associated with the purchase of beef, such as the financial risk (wasting money because the product did not meet the customers' expectations), social risk (class status when the consumer seeks to prepare the meat to impress only to find that expectations are not fulfilled), and psychological risk (where the product fails to meet taste expectations). In this study, perceived risk also involved fast checkout, local produce, origin, trading hours and loyalty.

According to Verbeke and Vackier (2004), meat is considered a high involvement product in the food product category, which requires consumers to access enough information about the product and to evaluate the product attributes carefully before purchase. To reduce the perceived risk in purchasing fresh/chilled meat from a retail outlet, quality assurance (labelling) and a long-term personal relationship with the butcher are common approaches. Yeung and Yee (2003) demonstrated how personal information from experts (butchers) or friends reduced the perceived risk associated with the purchase of poultry meat. Concerned meat consumers have shown their greatest concern over food safety (Verbeke and Vackier 2004). Although eating less meat, they purchased meat from their preferred butchers because of personal assurances and their perception that it was better quality meat. Irish consumers were found to be more confident when they purchased fresh beef from their preferred butcher as the meat was fresher, of higher quality and the service provided by butchers was better than supermarkets, which led to a reduction in the level of perceived risk (McCarthy and Henson 2005).

In this study, the origin of the meat (either locally or imported meat) was also considered as a criteria to reduce risk associated with the purchase of the meat. Purchase location was found to be the most important risk mitigation strategy, followed by the colour of the meat and country-of-origin (McCarthy and Henson 2005). In Sweden, consumers valued the importance of country-of-origin due to their desire to support their local beef industry (Hoffmann 2000). Swedish consumers were more aware of the process standards in their local beef industry, which considered the importance of animal welfare and food safety aspects. In Malaysia, the importance of country-of-origin may reflect consumers concerns about the Halal status of the meat.

Convenience was the second most important criteria influencing respondents' decision to purchase both fresh/chilled meat and fresh fruit and vegetables from a retail store. All three variables (everything all under one roof, near my house/work place and easy parking) were similar for both types of fresh food. Grunert (2006) described the concept of convenience in terms of time and money, and the preference for convenience food. When time was scarce and consumers experienced stress in their daily lives, Bonne and Verbeke (2006) described convenience as one-

stop-shopping. In Belgium, younger consumers dislike the idea of going to the butcher to purchase meat, and then going to the bakery to purchase bread. Most consumers preferred to shop from supermarkets where they could purchase everything they needed under one roof.

The proximity of the place of purchase was also described as convenience. Zenk et al. (2005) found a positive association between proximity to a retail outlet and the purchase of fresh fruit and vegetables. Having a supermarket near to the consumers' home, facilitated the purchase of fresh produce. Berdegue et al. (2005) found that some consumers were willing to pay a higher price to purchase their fresh produce in supermarkets rather than traditional retailers because of convenience. Similarly, although vegetables were perceived to be more expensive in supermarkets, McKinna et al. (2007) reported that Australian consumers went to supermarkets because of the ability to do a complete shop with convenient parking.

Value, which consisted of competitive price, value for money and the opportunity to bargain on price, was ranked the second equal most important construct in respondents' decision to purchase fresh fruit and vegetables. Consumers who were price responsive often compared the prices of fresh fruit and vegetables from both supermarkets and traditional retail outlets (McKinna et al. 2007). According to Pollard et al. (2002), price was reported to be more influential in consumers' food choice for lower socioeconomic groups. However, McKinna et al. (2007) described how value for money does not necessarily mean a lower price. Consumers evaluate value for money by weighing the performance of the product (quality and enjoyment) against price. The ability to bargain on price was important for many Malaysian consumers. Zinkhan et al. (1999) explained how bargaining is a cultural value which occurs in most markets in Brazil. This cultural tradition differentiates consumers' purchasing experience in the traditional markets from other modern retail outlets.

Price was ranked as the third most important construct by respondents in their decision to purchase fresh/chilled meat. For unbranded products such as meat, price is often used by consumers as an indicator of information when other information about the product is not available (Bernues et al. 2003; Bredahl 2004). Given that

66.0% of respondents purchased the majority of their fresh/chilled meat from traditional markets, price was indicated by the ability of the consumers to bargain on price. Maruyama and Trung (2007) described bargaining as the 'art of shopping' and found that in Vietnam, consumers who wanted to bargain were more likely to shop in traditional outlets (traditional bazaars and mom and pop stores). While consumers could be attracted by the lower price offered by supermarkets, factors such as quality and loyalty to the same butcher were considered more influential.

A total of five criteria (air-conditioned, advertising on radio/tv/newspaper, catering for kids, credit facilities and shopping points/loyalty programs) described the characteristics of a modern retail outlet for both fresh/chilled meat and fresh fruit and vegetables. However, the characteristics of a modern retail outlet were ranked as the least important criteria respondents considered in their decision to purchase both fresh/chilled meat and fresh fruit and vegetables from a retail outlet. This suggests that respondents considered other criteria as being more influential in their decision to purchase fresh food from a retail outlet.

When thinking about the quality of fresh/chilled meat and fresh fruit and vegetables, freshness was the most frequently cited variable respondents considered (Table 9.39).

Table 9.39: Variables respondents consider when they think about the quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (82.8%)	Freshness (93.2%)
Halal (57.6%)	Price (40.9%)
Cleanliness (43.6%)	Cleanliness (31.2%)

Halal, cleanliness and price were among the other variables most frequently cited by respondents when thinking about the quality of the fresh/chilled meat purchased. In purchasing fresh fruit and vegetables, price and cleanliness were the second and third most frequently cited variables by respondents. Halal was not a consideration in determining the quality of fresh fruit and vegetables.

With regards to the quality of fresh food, seven variables were afforded the highest measure of agreement (Table 9.40).

Table 9.40: The meaning of quality of fresh food

Quality means that the product …	
Fresh/chilled meat	**Fresh fruit and vegetables**
is fresh. is safe to eat. is guaranteed Halal. is nutritious. is free from chemical residues. is free from pests and disease. I will not be disappointed when I eat the product. is free from antibiotics/growth promotants. will taste good. I will be able to use most if not all of the product I have purchased. is good value for money.	is fresh. is safe to eat. is free from chemical residues. is nutritious. I will not be disappointed when I eat the product. is good value for money. is free from pests and disease.

The quality of both fresh/chilled meat and fresh fruit and vegetables revolved around freshness, food safety (safe to eat, free from chemical residues, free from pests and disease), nutrition and value (will not be disappointed when eating the product and good value for money). Wandel and Bugge (1997) similarly identified the multi faceted nature of food quality to include such variables as taste, freshness, appearance, nutritional value and food safety. Grunert et al. (2004) considered the consumers' perceptions of food quality to include sensory attributes, food safety, health and nutritional value.

Although value is most often explained by the relationship between quality and price (Zeithaml 1998 [cited in Grunert 2005]) and the minimisation of waste (Kennedy et al. 2004), the concept of value in the literature is often analysed in a different way. Using means-end theory, Grunert (2005) tries to understand the personal value to the consumer of happiness/well-being and the family's quality of life. Grunert (2005) believes that by understanding the concept of value, marketers are able to add more value to the product according to what the consumers want.

Respondents also considered several additional criteria which were perceived to influence the quality of fresh/chilled meat; Halal guaranteed, free from

antibiotics/growth promotants, good taste and the ability to use most of the product purchased. This would suggest that respondents believed that the purchase of fresh/chilled meat required more thought and effort, compared to the purchase of fresh fruit and vegetables. As the price of fresh/chilled meat is generally more expensive per kg than fresh fruit and vegetables, consumers' involvement with the purchase of fresh/chilled meat will be higher. Consumers are expected to gather more information and to be more involved in the decision to purchase to avoid making the wrong choice (Verbeke 2005a).

Principal component analysis identified three constructs which collectively captured the respondents' perceptions of the quality of both fresh/chilled meat and fresh fruit and vegetables (Table 9.41).

Table 9.41: Factors influencing quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Safe Meat production Utility	Food safety issues and value for money Utility of packaging

Similar results have indicated that the quality of fresh food was most often related to the safety of the product. For fresh/chilled meat, safe was determined by the freshness of the product. In Hoffmann (2000), food safety was assessed by the country-of-origin and the freshness of the meat. Cowan (1998), and Henson and Northern (2000) [cited in Bernues et al. (2003)] reported that freshness was the main cue in determining the safety of meat in six European countries. For fresh fruit and vegetables, safe indicates that the product is free from chemical residues, pests and diseases, and is also nutritious. The presence of chemical residues has become a major health concern for consumers in their purchase of fresh fruit and vegetables (Henneberry et al. 1999). Given that Malaysia is a major importer of many types of fresh produce from China, India, Indonesia and Thailand, as reported by Calvin et al. (2006), Chinese farmers are among the world's highest users of chemical fertilisers and pesticides, many of which are banned in the United States.

Respondents also indicated that the safety of the fresh fruit and vegetables they purchased was determined by the absence of any pests and diseases. Molnar (1995)

suggested that the presence of pathogens and parasites in food may be hazardous. To support the findings by Molnar (1995), Torjusen et al. (2001) revealed that food such as organics, which has not been genetically modified and does not contain any harmful substances, were considered among the most important criteria after freshness and taste.

Nutritious food was also a signal that the food was safe to eat (Caswell and Mojduszka 1996; Rico et al. 2007). However, Caswell and Mojduszka (1996) indicated that in many cases, food quality and the safety of the food cannot be determined by the nutritional value of the label on the food. While the label may describe the food, if the food is contaminated, this may result in illness, and thus, the nutritional level of the food is not an accurate indicator of the quality of the food.

An additional construct (value for money) was afforded similar measures of agreement as food safety in indicating the quality of the fresh fruit and vegetables purchased by respondents. Value for money was further described by three variables; (1) will not be disappointed when eating the food (what consumers want in a product), (2) good value for money (cost), and (3) the ability to use most of the product (no wastage). Similarly, Campbell et al. (2009) demonstrated that consumers were concerned about the value (reducing the wastage and money spent) of the fruit they had purchased. As fresh fruit deteriorates, many consumers do not simply discard undesirable fruit. Among the approaches to maximise the value of the fruit purchased, consumers may: (1) remove the “bad” bits and consume the remainder of the fruit, (2) find an alternative use for the fruit such as baking and stewing, or (3) increase the frequency of shopping to optimise the freshness of the fruit.

Sabbe et al. (2009) explained value for money in terms of price, which has raised two different arguments. Firstly, there are consumers who are prepared to pay a premium price, given that the fruits were bought for the taste and indulging character. Nevertheless, Sabbe et al. (2009) also found that consumers do not want to pay a high price and to be disappointed (expectations are often not confirmed). Both Campbell et al. (2009) and Sabbe et al. (2009) agreed that the opportunity to

taste the fruit prior to purchase will add value to the consumers' decision to purchase.

In comparison to fresh/chilled meat, although previous discussions have indicated that consumers emphasised value more in making their purchase to purchase fresh/chilled meat, value for money did not appear among the factors influencing the quality of fresh/chilled meat.

Respondents ranked meat production (production will not cause danger to farmers, environment and animals) as the second most highly rated factor associated with the quality of fresh/chilled meat. According to Caswell and Mojduszka (1996), food quality is determined by a number of characteristics, including food safety, nutrition and value, as well as the production process (animal welfare and environmental impact). Over the last 10 to 15 years, consumers in most European countries have become interested in the way food products are produced (Grunert et al. 2004). According to Wandel and Bugge (1997), phrases such as environmentally sound production and animal welfare are beginning to be included in the discussions of food quality. As a result of this, it was anticipated that consumers will begin to choose between competing products on the basis of production processes or some other ethical considerations that determine if the food is of better quality. In parallel, researchers question whether consumers will be willing to pay an additional price premium to secure these additional attributes. From this research, it is evident that Malaysian consumers are becoming more concerned about how their meat was produced, but their willingness to pay is yet to be ascertained.

Results indicate that the utility of packaging (looks attractive, attractively packaged, and longer shelf life) was the factor least considered by respondents when thinking about the quality of both fresh/chilled meat and fresh fruit and vegetables. Bernues et al. (2003) similarly concluded that packaging was less important to European consumers when purchasing meat products. Pre-packaged meat fulfils the demand of consumers who are more convenience oriented (Bernues et al. 2003; Resurreccion 2003). Resurreccion (2003) demonstrated how young European consumers evaluated the quality of the food they purchased by considering the nutritional value, the production system, and the packaging of the food. These

consumers were searching for information about the product through the brand or label attached to those products that had been pre-packaged. However, purchasing meat which has been pre-packaged may not be readily accepted by all consumers. As indicated by Bernues et al. (2003), older consumers are more accustomed to purchasing unpackaged and unbranded meat.

Respondents perceived that there were considerable differences between the quality of the fresh food available from modern retail outlets and the traditional markets (Table 9.42).

A higher percentage of respondents (62.2%) agreed that traditional markets offered the best quality fresh/chilled meat compared to modern retail stores. It was believed that the guarantee of Halal and more knowledgeable vendors were more influential in indicating that the quality of fresh/chilled meat was better in the traditional market. This finding corresponds with Goldman et al. (1999) who identified that attributes such as slaughtering the animal according to religious beliefs can be better handled by traditional retailers.

Table 9.42: The difference in the quality of fresh food between modern retail outlets and traditional markets

		Fresh/chilled meat		Fresh fruit and vegetable	
		N	**%**	**N**	**%**
Do you perceive any differences in the quality of [fresh/chilled meat/fresh fruit and vegetables] between modern retail outlets and traditional markets?	Yes	222	87.1	231	81.9
	No	33	12.9	51	18.1
Total		259	100.0	282	100.0
Which of the two retail outlets offer the best quality of [fresh/chilled meat/fresh fruit and vegetables]?	Modern retail outlets	98	37.8	160	56.7
	Traditional markets	161	62.2	122	43.3
Total		259	100.0	282	100.0

Freshness, cleanliness and price were the three most frequently cited variables considered by respondents in determining which retail outlet offered the best quality fresh food (Table 9.43).

Table 9.43: Variables respondents consider that the quality of fresh food is better from another retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (97.9%%)	Freshness (78.5%)
Cleanliness (38.7%)	Price (25.2%)
Halal (29.4%)	Cleanliness (21.9%)
Price (21.4)	Display area (17.8%)

Not unexpectedly, the concept of Halal was an additional variable which influenced respondents' perceptions as to where they could purchase the best quality fresh/chilled meat. This result concurs with both Bonne and Verbeke (2008b) and Talib et al. (2008), who show how Halal is an additional quality attribute in a predominantly Muslim country. Moreover, Ahmed (2008) revealed how the need to purchase Halal meat is emerging in the UK, even although the Muslim population is a minority.

In purchasing fresh fruit and vegetables, the display area emerged as another variable respondents considered in making their decision as to which retail outlet provided the best quality fresh fruit and vegetables. Uetrecht et al. (1999) found that displaying fresh produce attractively could influence consumers in their decision to purchase from a retail store. Fearne and Hughes (1999) reported a 50.0% increase in the sales of fresh produce in supermarkets by: (1) shifting the fresh produce department from the back of the store to the front and (2) doubling its shelf area. According to Bachmann and Earles (2000), temperature management is the single most important factor in preserving the quality of fresh produce after harvest. Refrigerated storage will retard the rate at which fresh produce deteriorates with aging, moisture loss, wilting, spoilage due to invasion by bacteria, fungi and yeast, and sprouting. In Malaysia, the refrigerated storage and display of fresh fruit and vegetable products is most often found in modern retail outlets. Kader (2001) and Liu et al. (2006) demonstrated that good refrigerated display units are mostly offered by supermarkets. Somewhat surprisingly, for the purchase of fresh/chilled meat, a chilled/frozen storage unit was cited by only 14.0% of respondents.

Cluster analysis identified two clusters of respondents who purchased the majority of the fresh/chilled meat they consumed in their household from either modern

retail stores (modern retail shoppers) or the traditional market (traditional market shoppers) (Table 9.44).

Table 9.44: Cluster of respondents by the place of purchase

Fresh/chilled meat		Fresh fruit and vegetables		
Modern retail shoppers	Traditional market shoppers	Modern retail shoppers	Transient shoppers	Traditional market shoppers

However, with regard to the purchase of fresh fruit and vegetables, cluster analysis identified three clusters of respondents who were described as modern retail shoppers, transient shoppers or traditional market shoppers. Transient shoppers do not demonstrate any preference for a particular retail store when purchasing fresh fruit and vegetables. Given that the purchase of fresh produce is often seen as a routine task, these shoppers will visit which ever retail store is perceived to be the most convenient for them at that time.

Although the clusters were labelled using similar terms, several similarities and differences were identified in the respective clusters for each fresh food item.

Modern retail shoppers for both fresh/chilled meat and fresh produce valued the convenience factors and the enjoyment of shopping from modern retail stores due to the availability of a wider range of fresh food, products that were clearly priced and displayed better. Linking the concept of convenience with supermarkets were mentioned in Farhangmehr et al. (2001), Shamsudin and Selamat (2005), Abu and Roslin (2008) and Ahmed (2008). Given that supermarkets and hypermarkets are able to offer many products to customers, this type of retail store is preferred due to its convenience (time) and practicality (Farhangmehr et al. 2001). Shamsudin and Selamat (2005) believe that the aspect of convenience and the provision of a comfortable shopping environment are among the competitive advantages modern retail outlets offer their shoppers. Ahmed (2008) found that the motive for consumers to shop at supermarkets such as Tesco was because everything was under one roof. Abu and Roslin (2008) described grocery shopping as a family outing for many Malaysians. For this reason, Malaysian consumers do their grocery

in modern retail stores, so that, at the same time, they can dine with the whole family, or accomplish other activities.

In terms of the ability of modern retail outlets to offer a wider range of food, Shamsudin and Selamat (2005) found that many Malaysian shoppers prefer to purchase their food products from supermarkets and hypermarkets because of the wide range of food from domestic and imported sources. Furthermore, shoppers who visit modern retail outlets are able to purchase a greater variety of processed food products (Hsu and Chang 2002).

Better product presentation may also attract shoppers to purchase their fresh food from supermarkets and hypermarkets. Bougoure and Lee (2009) found that consumers in Hong Kong described supermarkets as being superior to wet markets in their tangible offerings, which included how products were presented.

With regard to the purchase of fresh fruit and vegetables, respondents emphasised the benefits of visiting modern retail outlets, given that supermarkets and hypermarkets have longer operating hours compared to traditional markets. In Hong Kong for example, Bougoure and Lee (2009) indicated that the opening hours of most wet markets are governed by the government, which some describe as customer unfriendly, given that the trading hours do not cater to the needs of all consumers. Although extended trading hours are preferred by consumers, such may appeal only to a certain segment of consumers. Richbell and Kite (2007) revealed that younger and working shoppers benefit the most from extended shopping hours.

In the traditional market, for both fresh/chilled meat and fresh produce, both groups of shoppers were loyal to the same vendors each time they purchased fresh food from the traditional market. In purchasing fresh/chilled meat, in ensuring that the meat was safe and Halal, especially for a Muslim consumer, Grunert et al. (2004) found that consumers prefer to entrust their purchase to a butcher who is an expert in their field. In addition to this, the personalised services offered by the butcher such as cleaning the chicken or cutting the meat according to the consumers' preferences, encourage loyalty. Farhangmehr et al. (2001) demonstrated the linkage

between loyalty and store patronage, describing it as a relationship between the consumer and an entity (service or vendor).

As a result of having a good relationship with the vendors, shoppers were able to bargain on price. One common variable (the opportunity to bargain on price) was found supportive of traditional retail outlets in the respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. Maruyama and Trung (2007) found that in Vietnam, a consumer who wants to bargain would be more likely to shop at traditional markets instead of going to supermarkets. Lui (2008) found that consumers who prefer to shop at wet markets in Hong Kong mentioned that through bargaining, they managed to: (1) pay less than the actual price of the product (paying only $10 if the goods cost $11), and (2) receive additional products at no cost upon purchasing. Traditional retailers demonstrated that through bargaining, compromises could be made as long as it did not result in a huge loss from the transaction and it had symbolic value in reinforcing the tie between consumers and the retailer (Lui 2008). Bargaining involves flexibility, which is impossible in supermarkets, for the price is normally fixed. Bargaining requires skills, given that the better the shopper is at bargaining, the cheaper the price will become (Maruyama and Trung 2007; Huong n.d.). However, not all shoppers have good bargaining skills when purchasing food products. Maruyama and Trung (2007) found that the ability to bargain was related to the gender of the shopper. Given that men do not like bargaining as much as women shoppers, males are more likely to shop from supermarkets. In a similar study, Huong (n.d.) found that supermarkets had attracted more male shoppers because these shoppers can avoid bargaining. Maruyama and Trung (2007) suggest that shoppers who do most of their shopping from supermarkets do not consider bargaining to be useful. For them, obtaining products at a much cheaper price is less important in their decision to purchase. When shopping at a modern retail store, they search for superior products which are safer and better quality.

Traditional market shoppers for fresh/chilled meat believed that the fresh/chilled meat was fresher in the traditional markets. As a result, they would purposely visit the traditional market to purchase their fresh/chilled meat, even although they purchased other household products from supermarkets or hypermarkets. Goldman

et al. (1999), Goldman (2000) and Mai and Zhao (2004) report that shoppers often split their food purchases according to food items. Traditional markets were still the preferred place to purchase fresh food items, while modern retail outlets were the place to purchase other dry, frozen and pre-packaged food items. Furthermore, increasing numbers of shoppers are purchasing non-food items from modern retail outlets. In China, shoppers visit the supermarkets to purchase only selected products, but continue to purchase fresh meat, fish, fruit and vegetables from traditional markets (Mai and Zhao 2004).

Studies by Bernues et al. (2003), Verbeke and Vackier (2004) and McCarthy and Henson (2005) grouped respondents according to their level of involvement in purchasing fresh meat. In this study however, respondents were classified according to their store choice preferences when purchasing fresh food from a retail store. By way of comparison, the characteristics of modern retail shoppers for fresh/chilled meat were found to be different from the modern retail shoppers for fresh fruit and vegetables (Table 9.45).

Table 9.45: Factors influencing respondents' criteria of preferred retail outlet by cluster

Fresh/chilled meat survey		**Fresh fruit and vegetables survey**	
Modern retail shoppers	**Traditional market shoppers**	**Modern retail shoppers**	**Traditional market shoppers**
Characteristics of a modern retail outlet	Price	Perceived risk	Perceived risk
Convenience		Value	Value

Modern retail shoppers for fresh/chilled meat were found to emphasise the importance of a modern retail outlet (air-conditioned, advertising in print and/or electronic media, catering for the kids, the availability of trolleys and baskets, credit facilities and loyalty programs) and convenience (all under one roof, proximity to house/office and easy parking) when purchasing fresh/chilled meat. These shoppers dislike purchasing their fresh/chilled meat from a retail store which is hot, stuffy and unsuitable for children. However, modern retail shoppers for fresh fruit and vegetables perceived that supermarkets and hypermarkets could offer fresh produce with minimal risks (a wide range of fresh produce and other fresh produce, products that were easily accessible, clearly priced and labelled, good quality which they

could self-select) together with greater value (competitive price and value for money).

Although the differences identified by those shoppers who preferred to purchase their fresh food from a modern retail outlet were product specific, the discussion revolved around a good environment and facilities, convenience and value, which most modern retail outlets are able to offer to their shoppers. Devlin et al. (2003) found that a store environment which caters for children, makes food shopping an uncomplicated task (clear signage and labelling products), and was clean and tidy, was preferred by shoppers. Devlin et al. (2003) also discussed the importance of incorporating as many time saving features (easy access and parking facilities) as the store could afford.

Traditional market shoppers for fresh fruit and vegetables had similar characteristic to modern retail shoppers, highlighting the importance of perceived risk and value. Although the items which described perceived risk and value were similar, both types of shoppers have very different perceptions of the retail store at which they prefer to shop. According to Mitchell (1998), in relating perceived risk with store choice, any retailer who can offer their shoppers low-risk products will have a significant competitive advantage. Additionally, Mitchell (1998) suggests that the characteristics of shoppers vary due to their different approaches in reducing the risk and their tolerance to the different types of loss when purchasing fresh products. The range of fresh produce and other fresh food, and the accessibility of the product in-store were related to physical and time risks. Mitchell (1998) described that any physical or mental effort saved in the shopping trip or by the products purchased will help reduce physical risk, whereas time risk relates to the amount of time required to purchase the product. When associating these items with store choice, the literature suggests that it is still debatable as to which retail outlet offers the widest range of fresh produce for their consumers. Goldman et al. (2002); Reardon and Berdegue (2002); Hendrickson et al. (2006); Liese et al. (2007) and Figuie and Moustier (2009) found that the types of fresh fruit and vegetables available varied between the different types of retail stores. In terms of the ease of access while shopping, Pettigrew et al. (2005) and Liese et al. (2007) mentioned that products were generally more accessible in supermarkets.

Value, which is mainly about the cost of purchase, was also among the factors which most influence respondents in deciding which retail outlet to choose when purchasing fresh fruit and vegetables. Pollard et al. (2002), Liese et al. (2007) and Tam (n.d.) disagree on which retail outlet offers the best price for fresh produce. Given that the price of fruit and vegetables was found to be an influential criteria for consumers, Pollard et al. (2002) and Cassady et al. (2007) found that price was also a barrier for those from the lower socio-economic groups. Traditional market shoppers in the fresh/chilled meat survey revealed the importance of price (the opportunity to bargain) as a factor which encouraged them to purchase from traditional retailers compared to traditional market shoppers in the fresh produce survey.

The relationship between store attributes and the characteristics of different shoppers have been analysed by Mai and Zhao (2004), Shamsudin and Selamat (2005) and Maruyama and Trung (2007). In China, Mai and Zhao (2004) found that income had a significant influence on the place from which respondents purchased food. Malaysians shoppers, who were between the ages of 20 to 40 years old and lived in urban areas, placed more importance on convenience and preferred to shop from modern retail outlets (Shamsudin and Selamat 2005). Maruyama and Trung (2007) found that young shoppers were more often attracted by a good shopping environment, good product quality and time-saving aspects when food shopping. This study however was unable to find any significant differences between the socio-demographic characteristics of the sample and store attributes. Similarly, Goldman and Hino (2005) demonstrated that socio-demographic variables did not impact on the choice of retail store for the purchase of food products. According to Goldman and Hino (2005), shoppers were not restricted in their choice of retail store by socio-demographic measures.

9.5 Part Four: Review

Changes are happening within the retail food sector in both the developed and developing regions. Several push and pull factors have influenced the emergence of modern retail formats across the globe. These factors were identified as:

a) limited opportunities for supermarkets to expand in their domestic markets (Kamath and Godin 2001; Wong 2007)
b) strong economic growth in regions such as Latin America, Asia and Africa (Glover 1999, Goldman et al. 2002; Reardon and Berdegue 2002)
c) rapid growth in personal disposable income (Glover 1999; Reardon and Berdegue 2002; Shamsudin and Selamat 2005; Shepherd 2005)
d) increasing urbanisation (Geuens et al. 2003; Shepherd 2005), and
e) increasing concerns about food safety among consumers (Shamsudin and Selamat 2005; Shepherd and Galvez 2007; Wong 2007).

Consequently, modern retail formats are gradually replacing the role of traditional retail markets, providing consumers with more choice on where and when to shop.

In Malaysia, the first supermarket was introduced in 1964 in Kuala Lumpur (Othman 1990). During its early years of operation, it was reported that the customers were mainly expatriates and upper income people. As a result of changing lifestyles, modern consumers in Malaysia prefer to shop at supermarkets and hypermarkets for they provide greater convenience, comfort, cleanliness and quality (Glover 1999).

From the findings of this research, it is possible to conclude that only 28.5% of the population in the Klang Valley can be classified as committed buyers of fresh/chilled meat and fresh produce from supermarkets. According to Othman (1990), the consumers' choice of retail outlet was highly dependent on the category of household items. Fresh food was mainly purchased from wet markets, dry goods from grocery stores, while other products such as toiletries and canned/frozen food was most often purchased from modern retail outlets. Results from this study demonstrated that most Malaysians in the Klang Valley (66.4%) prefer to purchase their fresh/chilled meat from traditional markets.

Consumers' level of involvement is much higher for the purchase of fresh/chilled meat compared to fresh fruit and vegetables. According to McCarthy and O'Reilly (1999), meat is a product that poses a higher level of risk to consumers, either financially, as it is perceived to be more expensive than fresh fruit and vegetables,

and from a food safety perspective. However, the risk can be lessened depending on the type and amount of information provided.

Information on the Halal status of the fresh/chilled meat available in a retail store is required by most consumers in Malaysia. This is due to the fact that the majority of consumers are Muslim.

In the absence of any legitimate third party certification, personal trust developed between customers and vendors is important in determining the Halal status of fresh/chilled meat. This finding was similar to previous research by Bonne and Verbeke (2006) and Wan Omar et al. (2008). Trust is highly associated with the place of purchase for meat products, as most Muslims prefer to purchase fresh/chilled meat from an Islamic butcher who operates in a traditional market. Consumers place much value on being served by butchers of the same ethnic race and religion (Goldman and Hino 2005; Bonne and Verbeke 2006).

However, with the emergence of modern retailing and the growing importance of private brands, another source of information is the product label. Fresh/chilled meat that is guaranteed Halal carries a Halal food certificate and label. Halal food certification refers to an examination of the processes undertaken in the preparation, slaughtering, cleaning, processing, handling, disinfecting, storing, transporting and the management of the food product (Wan Omar et al. 2008). In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is the main organisation which provides Halal certification and is the main source of information for consumers regarding the Halal status. Most local fresh/chilled meat available from modern retailers carries the Halal logo produced by JAKIM, while imported meat carries their own Halal logo. Despite the advantages the logo has to offer, due to a lack of confidence, consumers prefer to purchase their fresh/chilled meat from trusted butchers in the traditional market. The credibility of the information and the personalised service provided by traditional vendors outweigh the institutionalised quality system for Halal fresh/chilled meat in Malaysia.

With regards to the purchase of fresh produce, more than one half of the respondents purchased their fresh fruit and vegetables from traditional markets.

However, the variation between respondents who purchased their fresh produce from traditional markets and modern retail stores were found to be relatively small. Freshness, competitive price, variety and convenience were found to be the major factors attracting consumers to purchase their fresh fruit and vegetables from both retail outlets (Table 9.46).

Table 9.46: Factors attracting consumers to purchase fresh fruit and vegetables supplies from modern retail outlets and traditional markets

Factors attracting consumers	Modern retail outlets	Traditional markets
Freshness	√	√
Variety	√	√
Competitive price	√	√
Convenience	√	√

Both retail outlets are perceived to have the advantage of offering fresh produce. Those consumers who visit the modern retail outlets relate freshness to the use of refrigerated display units. Other consumers who purchase their fresh fruit and vegetables from traditional retail outlets perceive that refrigerated products have been stored for a longer period, while fresh fruit and vegetables in the traditional markets are considered fresh and 'natural'(Faiguenbaum et al. 2002).

Modern retail outlets have the advantage of offering a wide variety of food and non-food items. In Malaysia, organically grown fruit and vegetables are generally available from most modern retail stores. Previous research however has revealed that many modern retail formats are less capable of handling fresh fruit and vegetables, as their main focus is on offering packaged and processed food (Goldman et al. 1999; Faiguenbaum et al. 2002). Therefore, many modern retail outlets are only capable of offering a limited range of fresh produce, which may not meet the consumers needs (Digal and Concepcion 2004 [cited in Shepherd 2005]).

The purchase of fresh/chilled meat and the purchase of fresh fruit and vegetables may be associated. When consumers purchase their fresh/chilled meat from traditional markets, at the same time, they may also purchase their fresh fruit and vegetables.

There is still much debate as to which retail store offers the lowest price for fresh food. Past research reveals that the price of food is much lower in supermarkets (Alwitt and Donley 1997; Aylott and Mitchell 1999; Chung and Meyers 1999). However, in order to compete with modern retail stores, traditional market vendors must not only maintain the quality of their fresh food, but ensure their prices are competitive (Tam n.d. and Faiguenbaum et al. 2002). In this study, differences in the price of fresh produce between retail stores was not investigated.

Convenience was cited by respondents as one of the most influential factors in their decision to purchase fresh fruit and vegetables from either retail format. The concept of convenience saves time and reduces stress for consumers when doing their shopping (Mitchell and Kiral 1998; Pride et al 2004). Convenience was also described by many attributes such as the location of the store, opening hours, one stop shopping, ease of movement, spaciousness, fast checkouts, store atmosphere, store attractiveness, and helpful staff (Mitchell and Kiral 1998). For modern retail shoppers, convenience for them was described as good store atmosphere, good customer service and good layout. For traditional market shoppers, they refer to convenience as the location of the store, which is close to where they work or live.

Traditional markets are still the preferred place to purchase fresh/chilled meat and fresh fruit and vegetables. Nevertheless, with higher education and increasing income, consumers are now demanding better quality, safe and healthy food. With consumers changing their lifestyle and store choice preferences, the shift is towards modern retail outlets and inevitably, traditional market vendors will struggle to survive in the market. However, factors such as the personalised service and the assurance of Halal were identified as competitive advantages for traditional retailers.

10. A description of the respondents' purchase of fresh/chilled meat

10.1 Chapter outline

This chapter reports on the respondents' purchase of fresh/chilled meat. Part One describes the purchasing pattern for fresh/chilled chicken. Part Two provides an insight into respondents' behaviour in their decision to purchase fresh/chilled beef.

Part Three identifies how respondents deal with their dissatisfaction with the quality of fresh/chilled meat after purchase. This section will also discuss the level of confidence respondents possess with regard to: (i) the safety of fresh/chilled meat consumed; and (ii) the methods employed by the Malaysian government to manage food safety and quality assurance systems with regards to chemical residues, sustainable production, microbial contamination and animal welfare. Part Four discusses the similarities and differences in the respondents' decision to purchase fresh/chilled chicken and beef from a retail outlet.

10.2 Part One: The purchase of fresh/chilled chicken

The majority of respondents interviewed (63.9%) purchased fresh/chilled chicken at least one time per week (Table 10.1).

Table 10.1: Frequency of purchasing fresh/chilled chicken

	N	%
Everyday	2	0.8
2 – 3 times per week	34	13.3
Once a week	127	49.8
Once every two weeks	65	25.5
Once a month	17	6.7
Others	10	3.9
	255	100.0

Some 25.5% of respondents purchased fresh/chilled chicken one time every two weeks. The remaining respondents purchased fresh/chilled chicken only one time per month (6.7%), or during festive seasons (3.9%).

Most respondents chose to purchase whole dressed chicken (77.1%) rather than proportions (Table 10.2).

Table 10.2: Forms respondents most often purchase fresh/chilled chicken (%)

	Mean	SD
Whole dressed chicken	77.1	30.6
Chicken portions	25.6	25.5
Chicken drumsticks	21.0	20.0
Chicken breast	20.0	16.6
Fillets skin on	18.5	29.5
Chicken ribs/keel	16.7	14.5
Fillets skin off	15.8	12.2
Chicken wings	14.6	10.0
Chicken thigh	14.1	9.6
Chicken cubes	12.8	13.9
Chicken center	11.3	7.6
Chicken feet	8.2	4.62
Chicken minced	7.8	5.4
Chicken gizzard	7.2	5.6
Chicken liver	7.1	4.6
Chicken bishop	6.2	5.1

The other portions most often purchased by respondents were chicken drumsticks (21.0%) and breast (20.0%). Portions such as gizzard (7.2%), liver (7.1%) and bishop (6.2%) were rarely purchased by the respondents.

The most popular method respondents used to cook chicken was by frying (92.2%). (Table 10.3). More than one half of the respondents (59.8%) used chicken to make soup. Other respondents used chicken in their red curry (36.7%), green curry (26.6%), or to roast and grill the chicken (33.6%).

Chicken was also utilised as an additional flavouring in dishes such as fried rice or fried noodles (17.9%). In the traditional Malaysian cuisine, chicken was used in preparing *sambal* (15.2%), *kurma* (8.9%), *rendang* (8.2%) and *tom yam* (6.3%).

Table 10.3: Methods how respondents cook chicken

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Fried	138	49	28	15	6	236	92.2
Soup	48	64	21	9	11	153	59.8
Red curry	14	31	32	14	3	94	36.7
Roasted/Grilled	12	12	21	22	19	86	33.6
Green curry	5	21	25	10	7	68	26.6
Additional flavouring	7	7	16	8	8	46	17.9
Sambal	2	12	10	9	6	39	15.2
Boiled	4	18	10	2	2	36	14.1
Soy sauce	2	4	11	8	3	28	10.9
Kurma			7	10	6	23	8.9
Tomato	1	4	5	8	4	22	8.6
Steam	4	7	2	5	3	21	8.2
Rendang	3	4	5	5	4	21	8.2
Tom yam		3	5	6	2	16	6.3
Braised	4	5	4	2		15	5.9
Any other dishes	8	1		1	1	11	4.3
BBQ		2	3	1	2	8	3.1
Stew	1	2	2			5	1.9
Paprik	1		1	1	1	4	1.6
Ginger	1				3	4	1.6
Porridge		1	1	1		3	1.2
Honey		1	1			2	0.8
Asam pedas				1	1	2	0.8
Black pepper	1			1		2	0.8
	256						

In making their decision to purchase fresh/chilled chicken, irrespective of the place of purchase, freshness (82.1%) was the most frequently cited variable (Table 10.4). Other variables most frequently cited included Halal (58.2%), cleanliness (55.8%) and price (47.0%). The concept of cleanliness was further described as the cleanliness of the retail outlet, including the display unit where the chicken meat was being stored and presented for purchase. The ability to bargain, particularly in the traditional markets, was considered under price.

Table 10.4: Variables respondents consider in their decision to purchase fresh/chilled chicken

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	82	86	21	11	6	206	82.1
Halal	103	10	21	10	2	146	58.2
Clean environment	16	42	45	26	11	140	55.8
Price	17	28	34	19	20	118	47.0
Variety/a lot of choices/many different parts available	4	14	13	7	9	47	18.7
Size/weight	8	10	9	8	6	41	16.3
Odourless	1	13	11	7	5	37	14.7
Skin colour	2	10	14	7	3	36	14.3
Quality	3	6	7	6	3	25	9.9
Friendly and knowledgeable vendors	3	4	4	9	4	24	9.6
Texture - Solid/not flaccid	5	3	3	5	3	19	7.6
Freedom from diseases		1	4	4	3	12	4.8
Freedom from chemicals/growth promotants		1	1	5	2	9	3.6
Nicely packed		1	3	1	1	6	2.4
Leanness			1	1	4	6	2.4
Location – near my house/office	2		1	2	1	6	2.4
Label/brand	1	2			3	6	2.4
Type of chicken	1	1	1	1	1	5	1.9
Local	2	1		1	1	5	1.9
Organic	1			2	1	4	1.6
Origin			3	1		4	1.6
Type of shop				2	1	3	1.2
Parking		2	1			3	1.2
Frozen/chilled storage		1	1			2	0.8
Intended use				1	1	2	0.8
Taste		1				1	0.4
Other products available from the shop				1		1	0.4
	251						

Other variables respondents considered in their decision to purchase fresh/chilled chicken were the variety of choice of the many different parts or portions (18.7%), the size or the weight of the chicken (16.3%), odour (14.7%) and skin colour (14.3%). Friendly and knowledgeable vendors were cited by some 9.6% of respondents as have some influence in their decision to purchase fresh/chilled chicken from a retail store. Although many respondents spoke of the need for the chicken to be free from disease (4.8%), chemicals and growth promotants (3.6%), they had little way of knowing that the product was safe, other than to rely on their

personal relationship with the vendor. A total of eleven variables were found to be of equal importance in influencing the respondents' decision to purchase fresh/chilled chicken (Table 10.5).

Table 10.5: Importance of variables influencing respondents' decision to purchase fresh/chilled chicken

	Mean	SD
Appropriately slaughtered (Halal)	5.90[a]	0.57
Freshness	5.89[a]	0.36
Halal certificate	5.83[a]	0.63
Smell/Odour	5.79[a]	0.53
Clean/no flies	5.77[a]	0.49
Flesh colour	5.75[a]	0.53
Skin colour	5.69[a]	0.61
Quality assurance label	5.58[a]	0.82
Value for money	5.52[a]	0.69
Competitive price	5.47[a]	0.78
Freedom from chemicals/growth promotants	5.40[a]	0.94
Freedom from antibiotics	5.37[b]	0.94
Country-of-origin	5.34[b]	0.99
Intended use	5.09[c]	0.95
Size	5.08[c]	1.04
Grown on local farms	5.01[d]	1.16
Fat content	4.97[e]	1.17
Available as individual parts	4.88[f]	1.17
Raised in a humane way	4.81[g]	1.16
Organically grown	4.76[g]	1.21
Leanness	4.64[g]	1.28
Label/brand	4.35[h]	1.42
Marbling	4.35[h]	1.37
Pre-packed	4.01[i]	1.41

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

The variables which described similar attributes have been grouped under the same theme, such as Halal (appropriately slaughtered and presenting a Halal certificate), physical appearance of the product (freshness, smell or odour, clean with no flies, flesh and skin colour), extrinsic indicators (quality assurance label, value for money and price) and food safety issues (chicken grown without chemicals or growth promotants).

That variable which was of least importance was pre-packed. Fresh/chilled chicken with a label attached and marbling were of lesser importance in the respondents' decision to purchase fresh/chilled chicken from a retail store. Other variables which

were not so important to the respondents when they purchased fresh/chilled chicken were the way the chicken had been raised (in a humane way or organically grown), and leanness.

Irrespective, it is unlikely that respondents will utilise all 24 variables in their decision to purchase fresh/chilled chicken from a retail store, given that the purchase of chicken is, in the majority of cases, only a routine decision. Principal component analysis was applied in order to reduce the number of variables into a smaller number of components. Principal component analysis, with varimax rotation and Kaiser normalisation, revealed four factors which collectively explained 73.8% of the variance observed in the respondents' decision to purchase fresh/chilled chicken (Table 10.6).

Table 10.6: Factors influencing respondents' decision to purchase fresh/chilled chicken

Variable	Factor			
	1	2	3	4
Organically grown	0.814			
Grown on local farms	0.805			
Freedom from antibiotics	0.795			
Raised in a humane way	0.772			
Freedom from chemicals/growth promotants	0.728			
Flesh colour		0.850		
Smell/odour		0.817		
Skin colour		0.806		
Freshness		0.684		
Clean/no flies		0.680		
Appropriately slaughtered (Halal)			0.972	
Halal certificate			0.934	
Competitive price				0.888
Value for money				0.883
Eigenvalue	5.613	1.881	1.709	1.133
Percent variance	24.39	23.25	13.56	12.63
Cumulative variance	24.39	47.64	61.19	73.83
Cronbach's alpha	0.871	0.854	0.937	0.890
Factor mean	5.09[c]	5.78[a]	5.87[a]	5.49[b]

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 5.61, captured five items which accounted for 24.4% of the variance. The Cronbach's alpha for this factor was 0.87. This factor

was labelled as “poultry production criteria” as it included numerous items regarding the way in which the chicken had been raised. However, this factor was the least important in the respondents’ decision to purchase fresh/chilled chicken.

Factor Two, with an Eigenvalue of 1.88 had five items. This factor accounted for 23.3% of the variance. Factor Two described the “physical appearance” of the product. The items which loaded onto this factor included flesh colour, smell/odour, skin colour, freshness and no flies. The Cronbach’s alpha for this factor was 0.85.

Factor Three, with an Eigenvalue of 1.71 included two items: appropriately slaughtered and Halal certificate. This factor was labelled as “Halal requirements”. The Cronbach’s alpha was 0.94, indicating a very high reliability. The items loading onto this factor clearly indicated the importance of Halal for the majority of respondents. Not unexpectedly, since Malaysia is a Muslim country, this factor was the most important consideration in the respondents’ decision to purchase fresh/chilled chicken.

Factor Four, with an Eigenvalue of 1.13, was labelled “price and value” as it was comprised of two items; competitive price and value for money. According to the mean score, this was the second most important factor respondents took into consideration when purchasing fresh/chilled chicken from a retail store.

In further analysing the importance of the criteria which were thought to be most influential in the respondents’ decision to purchase fresh/chilled chicken, the theory of perceived quality, as introduced by Steenkamp (1990), was applied. From the theory, a quality perception process model was utilised to understand how consumers construct perceptions of quality when selecting a particular product.

A list of variables (Table 10.5) containing attributes (cues) that were thought to be influential in the consumers’ decision to purchase fresh/chilled chicken from a retail store was presented to the respondents who were asked to match the variables with eight desired outcomes: taste, food safety, health and nutrition, value for money, good texture or mouth feel, environmental concerns, worker welfare and Halal guaranteed.

The first desired outcome was based on the respondents' expectation that the fresh/chilled chicken that they purchased would have a good taste. Freshness (75.1%) was the most frequently cited variable respondents believed to be associated with good taste (Table 10.7).

Table 10.7: The association between criteria utilised in the decision to purchase fresh/chilled chicken with a good taste

Desired outcome 1: The food has a good taste	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freshness	117	34	21	172	75.1
Smell/odour	26	37	36	99	43.2
Flesh colour	11	34	39	84	36.7
Skin colour	9	28	12	49	21.4
Clean/no flies	3	21	14	38	16.6
Appropriately slaughtered (Halal)	26	3	2	31	13.5
Organically grown	9	3	14	26	11.4
Leanness	3	6	4	13	5.7
Freedom from chemicals/growth promotants	4	5	3	12	5.2
Quality assurance label	5	5	1	11	4.8
Fat content	1	3	4	8	3.5
Halal certificate	8			8	3.5
Raised in a humane way	1	1	5	7	3.1
Grown on local farms	3	2	1	6	2.6
Freedom from antibiotics		5		5	2.2
Size			4	4	1.7
Competitive price	1		2	3	1.3
Marbling		2	1	3	1.3
Intended use	1			1	0.4
Nutritional value	1			1	0.4
Country-of-origin		1		1	0.4
Available as individual parts		1		1	0.4
Suitable for all kind of dishes		1		1	0.4
Last longer			1	1	0.4
	229				

Other criteria cited by respondents that were perceived to lead to good taste included smell/odour (43.2%), flesh colour (36.7%) and skin colour (21.4%). Some 16.6% of respondents associated clean and no flies with good taste. A few respondents believed that chicken being slaughtered appropriately (13.5%) and raised organically (11.4%) led to food which tasted better. Price (1.3%) and

country-of-origin (0.4%) were seldom cited by respondents as having any influence on the taste of the fresh/chilled chicken purchased.

Freedom from chemicals or growth promotants (51.1%) was the most frequently cited variable utilised by respondents in their decision to purchase fresh/chilled chicken that was perceived to be safe to eat (Table 10.8).

Table 10.8: The association between criteria utilised in the decision to purchase fresh/chilled chicken which is safe to eat

Desired outcome 2: The food is safe to eat	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freedom from chemicals/growth promotants	44	43	30	117	51.1
Appropriately slaughtered (Halal)	73	14	8	95	41.5
Freedom from antibiotics	18	36	23	77	33.6
Halal certificate	39	20	5	64	27.9
Clean/no flies	13	24	21	58	25.3
Quality assurance label	6	13	17	36	15.7
Freshness	11	14	11	36	15.7
Organically grown	5	7	16	28	12.2
Smell/odour	8	9	10	27	11.8
Country-of-origin	3	5	4	12	5.2
Flesh colour	2	2	5	9	3.9
Leanness	2	3	2	7	3.1
Skin colour	2	1	2	5	2.2
Fat content		3	1	4	1.7
Freedom from diseases	2	1		3	1.3
Raised in a humane way	1		2	3	1.3
Grown on local farms		2		2	0.9
Competitive price			2	2	0.9
Label/brand		1	1	2	0.9
Marbling			2	2	0.9
Suitable for all kind of dishes		1		1	0.4
Size			1	1	0.4
Prepacked			1	1	0.4
Last longer			1	1	0.4
	229				

The appropriateness of slaughter, which guaranteed that the food was Halal (41.5%), was the second most frequently cited variable, followed by freedom from antibiotics (33.6%), a Halal certificate (27.9%) and clean/no flies (25.3%). With the exception of clean/no flies, each of these variables could be described as credence quality attributes, for without the use of labels and/or a close personal relationship

with the vendor, respondents had no way of knowing that the product was free of chemicals, growth promotants or antibiotics, or that the chicken had been slaughtered according to Halal principles.

In determining that the food was safe to eat, variables such as freshness (15.7%), smell/odour (11.8%), flesh colour (3.9%) and skin colour (2.2%) were infrequently cited by respondents. This suggested that with regards to food safety, consumers were more concerned about chemical contamination rather than microbial contamination. As the survey was being conducted during the melamine scare, this may have elevated consumers' awareness. Competitive price (0.9%) was among the least frequently cited variables associated with food safety.

Freshness (36.1%) and freedom from chemicals and growth promotants (33.5%) were among the most frequently cited variables respondents used in their decision to purchase fresh/chilled chicken that was perceived to be healthy and nutritious (Table 10.9).

The other criteria mentioned by respondents were organically grown (26.4%) and cleanliness/no flies (24.2%). A third group of variables included flesh colour (18.9%), freedom from antibiotics (18.5%) and leanness (18.1%), although another 15.9% of respondents cited fat content.

The smell/odour (14.9%) and skin colour (10.1%) were also believed to be good indicators that the chicken was healthy and nutritious. Appropriate methods of slaughter (Halal) (13.7%) continued to emerge as an indicator that the meat was healthy and nutritious.

Table 10.9: The association between criteria utilised in the decision to purchase fresh/chilled chicken that is healthy and nutritious

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	57	14	11	82	36.1
Freedom from chemicals/growth promotants	22	34	20	76	33.5
Organically grown	29	13	18	60	26.4
Clean/no flies	16	22	17	55	24.2
Flesh colour	4	17	22	43	18.9
Freedom from antibiotics	8	18	16	42	18.5
Leanness	11	18	12	41	18.1
Fat content	17	13	6	36	15.9
Smell/odour	11	11	12	34	14.9
Appropriately slaughtered (Halal)	22	5	4	31	13.7
Skin colour	6	14	3	23	10.1
Quality assurance label	10	4	4	18	7.9
Grown on local farms	4	1	3	8	3.5
Halal certificate	5	2		7	3.1
Marbling	1	2	4	7	3.1
Size		1	2	3	1.3
Raised with good supervision	1	1		2	0.9
Freedom from diseases	1	1		2	0.9
Quality	2			2	0.9
Country-of-origin		1	1	2	0.9
Prepacked		1	1	2	0.9
Competitive price			2	2	0.9
Raised in a humane way			2	2	0.9
Label/brand			1	1	0.4
	227				

Country-of-origin (0.9%), competitive price (0.9%) and label or brand (0.4%) were infrequently cited by respondents as leading to a perception that the chicken was healthy and nutritious.

Competitive price (64.0%) was by far the most frequently cited variable with regard to purchasing fresh/chilled chicken that was perceived to represent good value for money (Table 10.10).

Table 10.10: The association between criteria utilised in the decision to purchase fresh/chilled chicken that represents good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	91	40	16	144	64.0
Value for money	16	26	21	63	28.0
Freshness	25	24	8	57	25.3
Size	29	13	13	55	24.4
Quality assurance label	16	8	9	33	14.7
Available as individual parts	2	12	10	24	10.7
Intended use	6	6	3	15	6.7
Clean/no flies	3	6	6	15	6.7
Appropriately slaughtered (Halal)	10	3	1	14	6.2
Freedom from chemicals/growth promotants	1	2	10	13	5.8
Label/brand	3	1	9	13	5.8
Country-of-origin	2	3	5	10	4.4
Organically grown	4	1	3	8	3.6
Flesh colour		6	2	8	3.6
Leanness		5	2	7	3.1
Halal certificate	3	3	1	7	3.1
Smell/odour	2	2	2	6	2.7
Grown on local farms	4	1	1	6	2.7
Prepacked	1	2	2	5	2.2
Marbling	1	1	1	3	1.3
Quality	3			3	1.3
Freedom from antibiotics		1	1	2	0.9
Fat content			1	1	0.4
Skin colour			1	1	0.4
Raised in a humane way	1			1	0.4
Nutritional value	1			1	0.4
The kids love it	1			1	0.4
Freedom from diseases		1		1	0.4
Easy to cook		1		1	0.4
	225				

Other variables that indicated that the chicken would bring greater value to the respondents were value for money (28.0%), freshness (25.3%) and size (24.4%). This grouping of variables signified that value for money was a subjective assessment. In this case, it was derived from both the extrinsic cues (value for money) and the physical attributes of the product (freshness and size). Each respondent had different views on what value meant to them. For example, consumers perceived that a large chicken purchased at a low price would bring greater value to them.

Chicken with a quality assurance label (14.7%), chicken that was available as individual parts (10.7%) and the intended use (6.7%) provided another group of variables that were often associated with good value for money. In making their decision to purchase fresh/chilled chicken, some respondents may search for product information available on the label. Other respondents may associate the various portions of the chicken with what they plan or intend to cook. This represented good value to consumers because less product would be wasted.

However, with regard to chicken that represented good value for money, respondents were less concerned about the way the chicken may have been raised including freedom from antibiotics (0.9%), raised in a humane way (0.4%) and freedom from disease (0.4%).

In identifying the attributes that were perceived to lead to good texture and mouth feel, the responses were very similar to those that were perceived to relate to good taste: freshness (50.1%), smell/odour (36.5%), flesh colour (33.8%) and skin colour (30.6%) (Table 10.11).

Respondents also cited chicken as having been raised organically (15.3%). However, in comparison to those attributes that respondents perceived would lead to good taste, respondents believed that the leanness of the meat (14.4%), marbling (8.1%) and the fat content (7.2%) had a greater impact on the texture and mouth feel of the meat. The amount of fat in part determines the tenderness of the meat (Grunert et al. 2004). Therefore, chicken with more fat was considered to be more tender and to have a better texture.

Table 10.11: The association between criteria utilised in the decision to purchase fresh/chilled chicken with the desired texture and mouth feel

Desired outcome 5: The food had good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	77	26	10	113	50.1
Smell/odour	23	27	31	81	36.5
Flesh colour	14	31	30	75	33.8
Skin colour	24	34	10	68	30.6
Organically grown	20	6	8	34	15.3
Leanness	11	14	7	32	14.4
Clean/no flies	7	9	10	26	11.8
Freedom from chemicals/growth promotants	4	9	6	19	8.6
Appropriately slaughtered (Halal)	12	4	2	18	8.1
Marbling	7	5	6	18	8.1
Fat content	4	7	5	16	7.2
Freedom from antibiotics	1	5	6	12	5.4
Quality assurance label	3	3	3	9	4.1
Size	1	3	3	7	3.2
Halal certificate	2		3	5	2.6
Raised in a humane way	3		2	5	2.6
Grown on local farms	1	1	2	4	1.8
Competitive price			3	3	1.4
Prepacked	2		1	3	1.4
Available as individual parts	2			2	0.9
Intended use	1	1		2	0.9
Label/brand	2			2	0.9
Country-of-origin			1	1	0.5
Nutritional value	1			1	0.5
Suitable for all kind of dishes		1		1	0.5
Last longer			1	1	0.5
	222				

Variables such as raising the chicken in a humane way (2.6%), locally grown (1.8%), competitive price (1.4%) or prepacked (1.4%) were seldom related to the texture or mouth feel.

Respondents believed that chicken raised organically (65.4%) would have a more beneficial impact on the environment (Table 10.12).

Table 10.12: The association between criteria utilised in the decision to purchase fresh/chilled chicken that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organically grown	78	29	35	142	65.4
Freedom from chemicals/growth promotants	45	38	18	101	46.5
Freedom from antibiotics	13	34	27	74	34.1
Grown on local farms	17	26	9	52	23.9
Raised in a humane way	27	11	12	50	23.0
Clean/no flies	4	7	3	14	6.5
Freshness	7	5	1	13	5.9
Appropriately slaughtered (Halal)	7	2	2	11	5.1
Quality assurance label	3	6	2	11	5.1
Halal certificate	7	1	2	10	4.6
Country-of-origin	4	2		6	2.8
Flesh colour		3	2	5	2.3
Smell/odour			4	4	1.8
Label/brand	1	2	1	4	1.8
Leanness	1	1	1	3	1.4
Fat content			2	2	0.9
Competitive price			2	2	0.9
Marbling			1	1	0.5
Size	1			1	0.5
Available as individual parts	1			1	0.5
Intended use			1	1	0.5
Free from disease	1		1	1	0.5
	217				

Chicken grown without chemicals or growth promotants (46.5%) and freedom from antibiotics (34.1%) were also linked with food that had been produced in a more environmentally friendly way. Locally produced chicken (23.9%) and chicken that had been raised in a humane way (23.0%) were also perceived to have less impact on the environment.

Those variables which respondents perceived to have little impact on the environment included cleanliness (6.5%), freshness (5.9%), appropriate slaughter (5.1%), a quality assurance label (5.1%), or a Halal certificate (4.6%).

Locally grown chicken (43.9%) was also perceived to have been produced in a way that protected worker welfare (Table 10.13).

Table 10.13: The association between criteria utilised in the decision to purchase fresh/chilled chicken that protected worker welfare

Desired outcome 7: The food has been produce in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Grown on local farms	55	27	8	90	43.9
Raised in a humane way	37	22	13	72	35.1
Freedom from chemicals/growth promotants	38	21	11	70	34.1
Organically grown	21	15	20	56	27.3
Freedom from antibiotics	4	17	17	38	18.5
Appropriately slaughtered (Halal)	11	3	6	20	9.8
Clean/no flies	2	8	3	13	6.3
Freshness	5	6	1	12	5.9
Quality assurance label	5	2	3	10	4.9
Halal certificate	9		1	10	4.9
Country-of-origin	4	3	2	9	4.4
Prepacked	3	3	1	7	3.4
Label/brand	2	2	2	6	2.9
Competitive price	3		3	6	2.9
Intended use	1		5	6	2.9
Available as individual parts	1	4		5	2.4
Smell/odour			3	3	1.5
Freedom from diseases	1	1	1	3	1.5
Leanness	2			2	0.9
Flesh colour		1		1	0.5
Value for money	1			1	0.5
	205				

With regards to worker welfare, the responses were very similar to those perceived to relate to preservation of the environment: raising the chicken in a humane way (35.1%), freedom from chemicals and growth promotants (34.1%), organically grown (27.3%) and freedom from antibiotics (18.5%). Chicken raised on local farms were perceived to promote worker welfare due to the respondents understanding of local poultry production. Chicken growers are required to attend training sessions conducted by the Department of Veterinary Services (Department of Veterinary Services n.d.) to ensure that they are well trained and familiar in managing a poultry farm.

Again, issues relating to Halal such as appropriate slaughter (9.8%) and an Halal certificate (4.9%) were seldom associated with worker welfare.

Most respondents associated chicken that was guaranteed Halal with a Halal certificate (81.3%) and chicken that had been appropriately slaughtered according to Islamic regulations (73.7%) (Table 10.14).

Table 10.14: The association between criteria utilised in the decision to purchase fresh/chilled chicken that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	**Ranking**			**N**	**%**
	1	**2**	**3**		
Halal certificate	80	97	5	182	81.3
Appropriately slaughtered (Halal)	125	31	9	165	73.7
Quality assurance label	2	19	47	68	30.4
Country-of-origin	1	6	22	29	12.9
Label/brand	8		10	18	8.0
Grown on local farms	1	4	5	10	4.5
Clean/no flies		4	6	10	4.5
Freshness	3	4	1	8	3.6
Freedom from chemicals/growth promotants	1	2	1	4	1.8
Raised in a humane way	2		1	3	1.3
Organically grown		2	1	3	1.3
Competitive price			2	2	0.9
Flesh colour			2	2	0.9
Freedom from antibiotics	1			1	0.4
Skin colour		1		1	0.4
Not mixed with non-Halal items		1		1	0.4
	224				

A quality assurance label (30.4%) was the third most frequently cited variable respondents associated with the purchase of fresh/chilled chicken that was guaranteed Halal. Furthermore, the origin of the chicken (12.9%) and the label or brand (8.0%) also provided some indication as to whether the product was guaranteed Halal.

With the exception of desired outcome four, competitive price was one of the variables least often cited by respondents in their decision to purchase fresh/chilled chicken. Competitive price was seldom associated with the taste of the chicken, whether it was safe to eat, healthy and nutritious, or whether it had a good texture and mouth feel. This suggests that there is little relationship between price and the quality of the fresh/chilled chicken available in most retail outlets in Malaysia. Changes in price are most often related to changes in the supply and demand, rather

than to any difference in the physical attributes of the meat, except for the size of the chicken. Manzor and Alyasa (2010) indicated that the price for fresh chicken increased between RM0.30 to RM1.50 per kilogram due to the increased demand for chicken meat during the school holidays, a popular period when a lot of wedding ceremonies are held. Conversely, Yeung and Morris (2001) reported that free range chicken was more expensive than normal chicken. Here, respondents believed that free range chicken was of better quality, for it had been produced with less antibiotics (food is safe to eat) and it tasted better. Similarly, Harper and Makatouni (2002) reported that the cost of purchasing organic and free range food, which included chicken, was more expensive than normal food, it was safer to eat and more beneficial for the consumers' health.

Kennedy et al. (2004) was able to demonstrate an association between price and value for money. According to Kennedy et al. (2004), although several chicken portions such as breast fillets were reported to be more expensive than a whole chicken, chicken portions provide better value for money for the buyer, given that almost all of the meat is used which results in less waste.

With regards to the environment and worker welfare, competitive price was infrequently cited by respondents, presumably because most respondents recognised that imposing more regulations would increase the price. Similarly, when considering that the food was guaranteed Halal, a competitive price was not a consideration.

The importance of each of the desired values was then ranked by respondents. The importance of Halal, food that was safe to eat and food that was healthy and nutritious were all equally important in the respondents' decision to purchase fresh/chilled chicken (Table 10.15).

Table 10.15: Importance of criteria respondents use in their decision to purchase fresh/chilled chicken in a retail store

	Mean	SD
The food is guaranteed Halal	5.87[a]	0.62
The food is safe to eat	5.85[a]	0.39
The food is healthy and nutritious	5.80[a]	0.49
The food had good texture/mouth feel	5.61[b]	0.69
The food has a good taste	5.58[c]	0.74
The food represents value for money	5.44[d]	0.82
The food has been produced in a way that is good for the environment	5.16[e]	1.00
The food has been produced in a way that protects worker welfare	5.01[e]	1.09

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Conversely, those issues that related to the environment and to worker welfare were significantly less important to respondents.

Some 37.8% of respondents were found to be always dissatisfied with the Halal status of the meat, while another 30.0% of respondents always had reservations about the safety of the fresh/chilled chicken they had purchased (Table 10.16).

Respondents often felt dissatisfied that the fresh/chilled chicken they had purchased was unhealthy and not nutritious (23.0%), did not represent good value for money (21.9%) or had a poor texture/mouth feel (20.8%). Some 17.5% of respondents were displeased with the taste of the fresh/chilled chicken they had purchased, and another 16.1% of respondents were dissatisfied with the way in which poultry production impacted on the environment. Some 17.0% of respondents were dissatisfied with the way in which poultry production impacted on worker welfare.

Despite the unsatisfactory experiences, more than half of the respondents (50.6%) had never purchased fresh/chilled chicken that was not Halal. Similarly, more than half of the respondents (56.5%) had never (or at worst one time in ten) had an unpleasant experience when purchasing fresh/chilled chicken that was unsafe to eat, that did not protect worker welfare (54.7%), that did not deliver a good taste (54.0%), was unhealthy (53.2%), had a poor texture/mouth feel (52.0%) or was not good for the environment (51.0%). Conversely, only 47.0% of respondents reported that they were very seldom disappointed with the purchase of fresh/chilled chicken

meat that represented good value for money. This would suggest that for a large segment of the Malay population, price was a major consideration in their decision to purchase fresh/chilled meat.

Table 10.16: Occasions where respondents felt unhappy with the quality of fresh/chilled chicken purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 251	50.6	7.6	1.2	0.4	0.8	1.6	37.8	1.0	1.0
The food is safe to eat. N = 253	41.5	15.0	4.0	0.8	3.2	5.5	30.0	1.0	2.0
The food is healthy and nutritious. N = 252	34.9	18.3	6.3	2.8	4.4	10.3	23.0	1.0	2.0
The food represents value for money. N = 251	25.9	21.1	7.2	7.2	6.0	10.8	21.9	1.0	3.0
The food has good texture/mouth feel. N = 250	26.8	25.2	5.6	4.8	4.8	12.0	20.8	1.0	2.0
The food has a good taste. N = 252	27.8	26.2	11.1	4.0	3.6	9.9	17.5	1.0	2.0
The food has been produced in a way that protects worker welfare. N = 247	38.9	15.8	6.9	6.1	5.7	9.7	17.0	1.0	2.0
The food has been produced in a way that is good for the environment. N = 249	34.9	16.1	10.0	4.8	8.0	10.0	16.1	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

For those respondents who expressed their dissatisfaction with the quality of the fresh/chilled chicken purchased, in the majority of cases, it was found not to be fresh (74.3%) (Table 10.17).

Table 10.17: Reasons for dissatisfaction with the quality of fresh/chilled chicken

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Not fresh	83	37	23	6	7	156	74.3
Smelly	29	31	15	7	5	87	41.4
Price	27	16	15	9	5	72	34.3
Taste	15	10	7	7	4	43	20.5
Colour	10	13	10	7	3	43	20.5
Bad texture	9	15	9	4	4	41	19.5
Not clean	7	13	6	5	2	33	15.7
Not Halal guaranteed	11	6	6	2	2	27	12.9
How chicken is grown is unknown	4	8	5	5	2	24	11.4
Size	4	6	3	3	3	19	9.0
No cleaning/cutting service	1	5	2	3	7	18	8.6
A lot of fat	3	5	3	6	1	18	8.6
No quality	5	3	1	1	1	11	5.2
Prepacked	1	1		3		5	2.4
Frozen/chilled for too long	1	1				2	0.9
Availability			1	1		2	0.9
Wastage					1	1	0.5
	210						

Respondents were also dissatisfied when the fresh/chilled chicken purchased was found to have an unpleasant smell (41.4%). Several respondents also expressed their dissatisfaction with the physical attributes of the fresh/chilled chicken purchased such as colour (20.5%), texture (19.5%) and lack of cleanliness (15.7%). Many respondents were also disappointed with the price of the chicken (34.3%) stating that the meat was too expensive. Some 12.9% of respondents were dissatisfied when the fresh/chilled chicken available in some retail outlets was not or could not be guaranteed Halal (12.9%). Other respondents (11.4%) were concerned by the lack of information about how the chicken had been raised.

10.3 Part Two: The purchase of fresh/chilled beef

The total number of respondents who purchased fresh/chilled beef (189) was considerably lower than the number of respondents who purchased fresh/chilled chicken (255). The main reason given by respondents who chose not to purchase beef was concern for their family or their own health.

Only 23.2% of respondents purchased fresh/chilled beef at least one time per week (Table 10.18).

Table 10.18: Frequency of purchasing fresh/chilled beef

	N	%
Everyday	1	0.5
2 – 3 times per week	11	5.8
Once a week	32	16.9
Once every 2 weeks	48	25.4
Once a month	70	37.0
Others	27	14.3
	189	100.0

Some 37.0% of respondents purchased fresh/chilled beef only one time per month, while 25.4% of respondents purchased fresh/chilled beef only one time per fortnight. Some 14.3% of respondents purchased fresh/chilled beef only during the festive seasons.

When purchasing fresh/chilled beef, most respondents selected topside (53.4%) and beef cubes (30.0%) as their preferred cuts (Table 10.19).

Table 10.19: Forms respondents most often purchase fresh/chilled beef (%)

	Mean	SD
Beef topside	53.4	33.1
Beef cube	30.0	24.6
Beef strip	26.3	18.1
Beef tenderloin	23.1	24.8
Beef chuck tender	22.1	18.5
Soup meat	21.6	17.9
Beef bone (soup)	20.7	17.8
Beef minced	17.8	16.2
Beef cutlet	15.8	13.5
Beef eye round	15.7	12.3
Beef fillet	15.3	13.5
Beef t-bone	14.4	13.9
Ox tail	12.8	11.5

The most popular method for respondents to cook beef was to fry the meat (63.9%) and to make soup (61.8%) (Table 10.20).

Table 10.20: Methods how respondents cook beef

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Fried	45	33	24	12	5	119	63.9
Soup	58	32	10	11	4	115	61.8
Red curry	17	21	18	10	3	69	37.1
Roasted	11	12	12	17	9	61	32.8
Boiled	15	11	10	4	2	42	22.6
Green curry	9	15	14	3	1	42	22.6
Soy sauce	5	15	9	8	1	38	20.4
Rendang	6	11	7	4	9	37	19.9
Additional flavouring	1	4	8	5	3	21	11.3
Any other dishes	10	6	1	2	1	20	10.8
Sambal		4	4	6	5	19	10.2
BBQ	1	2	4	5	3	15	8.1
Kurma	1	5	3	1	4	14	7.5
Spaghetti	1		2	2	2	7	3.8
Tomato	2		4			6	3.2
Steam			3	1	2	6	3.2
Stew	2	1	1		1	5	2.7
Black pepper	2		1	1		4	2.2
Tom Yam			2	1	1	4	2.2
Asam pedas			2			2	1.1
Beef floss					2	2	1.1
Sauté		1				1	0.5
Porridge			1			1	0.5
Turmeric					1	1	0.5
	186						

Some 37.1% of respondents used beef to make red curry, while 32.8% of respondents prepared roast beef. Other methods to cook beef were to boil the meat (22.6%), make green curry (22.6%) and to cook with soy sauce (20.4%). Several respondents mentioned that they use beef in *rendang* (19.9%), a popular dish served during the Eid feast. Beef was also used in preparing traditional Malaysian cuisine such as *sambal* (10.2%), *kurma* (7.5%), *tom yam* (2.2%) and *asam pedas* (1.1%).

Most respondents cited freshness (80.0%) as that variable which was most influential in their decision to purchase fresh/chilled beef (Table 10.21).

Whether the beef was Halal (58.9%) was the second most frequently cited variable, followed by price (47.0%) and cleanliness (40.0%). Other variables mentioned

included the colour of the meat (27.0%) and the respondents' sense of smell (18.9%).

Table 10.21: Variables respondents consider in their decision to purchase fresh/chilled beef

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	62	50	18	9	9	148	80.0
Halal	68	9	16	11	5	109	58.9
Price	10	25	18	20	14	87	47.0
Clean	8	25	16	17	8	74	40.0
Colour	11	21	11	4	3	50	27.0
No smell		6	16	11	2	35	18.9
Quality	1	6	13	4	3	27	14.6
Texture	3	7	6	6	2	24	12.8
Country-of-origin	7	5	5	2	5	24	12.8
Leanness	5	2	8	5	3	23	12.4
Variety	2	4	5	5	5	21	11.4
Muslim vendors	2	4	1	4	3	14	7.6
Freedom from chemicals/preservatives		2	2	3	3	10	5.4
Size			5	2	1	8	4.3
Nicely packed		2	3	2		7	3.8
Date of packed displayed	1	2		2	1	6	3.2
Type of shop		1	1	2	1	5	2.7
Location – near my house/office	3			1		4	2.2
Facilities that are available		1	2	1		4	2.2
Stored in a chilled place	1			1	1	3	1.6
Taste	1				1	2	1.1
Intended use					2	2	1.1
Display area			1			1	0.5
I can also buy other products					1	1	0.5
	185						

The origin of the meat (12.8%) was also cited as being influential in their decision to purchase fresh/chilled beef due to personal preferences. Some respondents preferred to buy local beef, while others preferred to purchase imported beef. Several respondents were influenced by the leanness of the meat (12.4%) and the variety of the cut (11.4%), for different methods of preparing the meat require different cuts. Freedom from chemicals and preservatives (5.4%) were seldom mentioned as influencing the respondents' decision to purchase fresh/chilled beef.

A total of eleven variables were identified as being of equal importance to respondents in their decision to purchase fresh/chilled beef (Table 10.22).

Table 10.22: Importance of variables influencing respondents' decision to purchase fresh/chilled beef

	Mean	SD
Appropriately slaughtered (Halal)	5.90[a]	0.44
Halal certificate	5.88[a]	0.43
Freshness	5.87[a]	0.37
Clean/no flies	5.79[a]	0.47
Smell/Odour	5.76[a]	0.57
Flesh colour	5.74[a]	0.59
Quality assurance label	5.54[a]	0.75
Competitive price	5.46[a]	0.79
Value for money	5.44[a]	0.81
Freedom from chemicals/growth promotants	5.40[a]	0.87
Freedom from antibiotics	5.38[a]	0.92
Country-of-origin	5.29[b]	0.99
Leanness	5.28[b]	0.92
Marbling/fat content	5.24[b]	0.91
Intended use	5.18[c]	1.01
Available as individual parts	5.17[d]	1.12
Grown on local farms	5.16[d]	1.07
Organically grown	5.08[d]	1.04
Raised in a humane way	4.97[d]	1.11
Size	4.89[e]	1.15
Label/brand	4.66[f]	1.28
Skin colour	4.58[g]	1.75
Pre-packed	4.39[h]	1.32

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Variables in this first group included Halal (appropriately slaughtered and Halal certificate), the physical appearance of the meat (freshness, clean/no flies, smell/odour and flesh colour), extrinsic attributes (quality assurance label, competitive price and value for money) and food safety concerns (no chemicals or growth promotants and free from antibiotics).

A second group of variables which was of considerable importance to respondents in their decision to purchase fresh/chilled beef included country-of-origin, leanness and marbling or fat content.

Principal component analysis with varimax rotation and Kaiser normalisation revealed five factors which collectively explained 69.7% of the variance observed in influencing respondents' decision to purchase fresh/chilled beef (Table 10.23).

Table 10.23: Factors influencing respondents' decision to purchase fresh/chilled beef

	Factor				
	1	**2**	**3**	**4**	**5**
Freedom from chemicals/growth promotants	0.860				
Freedom from antibiotics	0.811				
Raised in a humane way	0.790				
Organically grown	0.777				
Grown on local farms	0.730				
Pre-packed		0.744			
Label/brand		0.711			
Size		0.707			
Intended use		0.655			
Available as individual parts		0.635			
Smell/odour			0.712		
Clean/no flies			0.710		
Flesh colour			0.668		
Value for money				0.820	
Competitive price				0.819	
Appropriately slaughtered (Halal)					0.864
Halal certificate					0.855
Eigenvalue	5.922	1.915	1.620	1.277	1.112
Percent variance	20.98	16.53	10.96	10.83	10.37
Cumulative variance	20.98	37.51	48.48	59.31	69.67
Cronbach's alpha	0.881	0.783	0.652	0.936	0.735
Factor mean	5.19^{c}	4.86^{d}	5.77^{a}	5.46^{b}	5.89^{a}

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 5.92 captured five items and accounted for 20.9% of the variance. This factor could be labelled as "cattle production criteria" since this construct contained implicit items regarding how the cattle had been raised. The Cronbach's alpha for this factor was 0.88. However, in making their decision to purchase fresh/chilled beef, this factor was only the third most important.

Factor Two, with an Eigenvalue of 1.92 also had five items which accounted for 16.5% of the variance. Items in Factor Two described the availability of different

cuts and sizes, and pre-packaged meat which had a label or a brand. The Cronbach's alpha for this factor was 0.78. However, this factor was the least important in the respondents' decision to purchase fresh/chilled beef from a retail store. This factor was labelled as "functional quality" for it described the availability of the product in a manner which related to the way in which the respondent intended to use the product.

Factor Three captured three items which described the "intrinsic cues of the product": smell, cleanliness and colour. The Cronbach's alpha for this factor was 0.65 and it explained 10.9% of the variance. This factor was one of the most important criteria respondents considered in their decision to purchase fresh/chilled beef.

Factor Four, with an Eigenvalue of 1.28, captured two items that accounted for 10.8% of the variance. The Cronbach's alpha for this factor was 0.94, indicating a very high reliability. This factor was labelled as "price and value". Factor Four was the second most important variable considered by respondents when purchasing fresh/chilled beef.

Factor Five included two items that collectively captured the need for "Halal". It accounted for 10.4% of the variance. With a Cronbach's alpha of 0.74, the item was considered reliable. This factor was also one of the most important in the respondents' decision to purchase fresh/chilled beef from a retail outlet.

Respondents were then asked to identify the extent to which the various variables could be used/employed to predict desired outcomes. Most respondents (69.6%) suggested that freshness was a good indicator of taste (Table 10.24).

Other variables that were most frequently linked to good taste were flesh colour (50.3%) and the smell or odour of the meat (46.6%). Skin colour (14.9%), cleanliness (14.9%) and leanness of the meat (14.3%) provided a third group of variables. Price (1.2%) and the country-of-origin of the fresh/chilled beef (0.6%) were perceived to have little impact on the taste of the product.

Table 10.24: The association between criteria utilised in the decision to purchase fresh/chilled beef and good taste

Desired outcome 1: The food has a good taste	Ranking			N	%
	1	2	3		
Freshness	53	42	17	112	69.6
Flesh colour	34	31	16	81	50.3
Smell/odour	12	28	35	75	46.6
Skin colour	16	5	3	24	14.9
Clean/no flies	6	6	12	24	14.9
Leanness	5	8	10	23	14.3
Appropriately slaughtered (Halal)	16	1	1	18	11.2
Marbling/fat content	4	7	4	15	9.3
Organically grown	3	1	4	8	4.9
Halal certificate	6	1	1	8	4.9
Freedom from chemicals/ growth promotants	1	4	3	8	4.9
Grown on local farms	2		3	5	3.1
Intended use		2	3	5	3.1
Freedom from antibiotics		2		2	1.2
Size			2	2	1.2
Competitive price		2		2	1.2
Available as individual parts	2		2	2	1.2
Quality assurance label			1	1	0.6
Country-of-origin		1		1	0.6
Value for money	1			1	0.6
	161				

The means by which the cattle had been slaughtered (38.7%) and freedom from chemicals and growth promotants (37.7%) were the two most frequently cited variables that were believed to guarantee that the meat was safe to eat (Table 10.25).

With regards to food safety, other variables that were frequently cited by respondents described the physical appearance of the meat such as clean/no flies (32.1%) and freshness (20.4%). Information provided by vendors such as cattle raised free from antibiotics (29.0%) and the availability of an Halal certificate (26.5%) provided additional assurances that the meat was safe to eat. Only a few respondents (0.6%) linked variables such as chilled/refrigerated to meat that was considered safe to eat. Similarly, price was cited by only 0.6% of respondents as providing an assurance that the meat was safe to eat.

Table 10.25: The association between criteria utilised in the decision to purchase fresh/chilled beef which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Appropriately slaughtered (Halal)	34	16	13	63	38.9
Freedom from chemicals/growth promotants	24	20	17	61	37.7
Clean/no flies	32	12	8	52	32.1
Freedom from antibiotics	9	24	14	47	29.0
Halal certificate	24	11	8	43	26.5
Freshness	11	13	9	33	20.4
Quality assurance label	5	9	10	24	14.8
Smell/odour	3	9	9	21	12.9
Organically grown	6	5	8	19	11.7
Flesh colour	6	5	5	16	9.9
Country-of-origin	3	5	7	15	9.3
Grown on local farms		3	3	6	3.7
Marbling/fat content	1	1	4	6	3.7
Leanness		2	1	3	1.9
Raised in a humane way		1	2	3	1.9
Skin colour	3			3	1.9
Label/brand			2	2	1.2
Prepacked	1	1		2	1.2
Chilled/refrigerated			1	1	0.6
Competitive price		1		1	0.6
Size			1	1	0.6
	162				

In determining that the beef was healthy and nutritious, freshness (42.1%) was the most frequently cited variable (Table 10.26).

Other variables that were linked to health and nutrition were freedom from chemicals or growth promotants (28.3%), flesh colour (23.9%), cleanliness (22.6%), freedom from antibiotics (22.0%), organically grown (21.4%) and the leanness of the meat (21.4%).

The country-of-origin (0.6%), a competitive price (0.6%) and label or brand (0.6%) were the variables least often cited by respondents as inferring that the meat was healthy and nutritious.

Table 10.26: The association between criteria utilised in the decision to purchase fresh/chilled beef with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	36	18	13	67	42.1
Freedom from chemicals/growth promotants	8	20	17	45	28.3
Flesh colour	13	17	8	38	23.9
Clean/no flies	15	12	9	36	22.6
Freedom from antibiotics	11	14	10	35	22.0
Organically grown	19	7	8	34	21.4
Leanness	10	8	16	34	21.4
Smell/odour	6	6	11	23	14.5
Marbling/fat content	4	12	6	22	13.8
Appropriately slaughtered (Halal)	15	2	2	19	11.9
Quality assurance label	8	4	5	17	10.7
Halal certificate	8	2	2	12	7.5
Skin colour	5	3	2	10	6.3
Grown on local farms		4	3	7	4.4
Raised in a humane way	1	1	1	3	1.9
Country-of-origin		1		1	0.6
Competitive price		1		1	0.6
Label/brand		1		1	0.6
	159				

Competitive price (64.7%) was the most frequently cited variable associated with good value for money (Table 10.27).

In the purchase of fresh/chilled beef, good value was ascertained by such variables as freshness (26.3%), value for money (22.4%), a quality assurance label (20.5%) and size (19.2%). Value was apparently a compromise between two variables that captured both the extrinsic cues (value for money and quality assurance label) and the physical attributes of the meat (freshness and size).

A third group of variables which were perceived to lead to value when purchasing fresh/chilled beef were label/brand (9.6%), appropriate slaughter (7.7%), availability of individual parts (7.1%), the intended use (6.4%) and Halal certification (6.4%).

Table 10.27: The association between criteria utilised in the decision to purchase fresh/chilled beef that represented good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	60	31	10	101	64.7
Freshness	17	19	5	41	26.3
Value for money	16	10	9	35	22.4
Quality assurance label	6	12	14	32	20.5
Size	15	6	9	30	19.2
Label/brand	6	1	8	15	9.6
Appropriately slaughtered (Halal)	6	5	1	12	7.7
Available as individual parts		6	5	11	7.1
Intended use	4	3	3	10	6.4
Halal certificate	5	3	2	10	6.4
Flesh colour	5	1	3	9	5.8
Clean/no flies	3	2	3	8	5.1
Smell/odour		3	5	8	5.1
Freedom from chemicals/growth promotants	1	3	4	8	5.1
Country-of-origin		3	4	7	4.5
Grown on local farms	3	2	2	7	4.5
Leanness	2	2	3	7	4.5
Prepacked	4	2		6	3.8
Organically grown			3	3	1.9
Marbling/fat content	1	1	1	3	1.9
Freedom from antibiotics	1		1	2	1.3
Skin colour	1			1	0.6
	156				

More than half of the respondents perceived that there was a positive association between freshness (57.9%) and the texture or mouth feel of the fresh/chilled beef purchased (Table 10.28).

Other variables identified by respondents as good predictors of the desired texture and mouth feel included flesh colour (46.5%) and the sense of smell (30.6%). The fat content (17.2%) and leanness of the meat (16.6%) were also associated with a good texture or mouth feel for fresh/chilled beef. Such variables as competitive price, animal welfare, prepacked beef and the country-of-origin of the beef were cited by only one respondent as having any impact on texture or mouth feel.

Table 10.28: The association between criteria utilised in the decision to purchase fresh/chilled beef with good texture/mouth feel

Desired outcome 5: The food had good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	46	32	13	91	57.9
Flesh colour	26	27	20	73	46.5
Smell/odour	9	17	22	48	30.6
Marbling/fat content	11	12	4	27	17.2
Leanness	12	7	7	26	16.6
Organically grown	7	7	7	21	13.4
Clean/no flies	8	4	8	20	12.7
Skin colour	12	5	2	19	12.1
Appropriately slaughtered (Halal)	9	3	3	15	9.6
Freedom from chemicals/growth promotants	1	6	7	14	8.9
Grown on local farms	1	5	2	8	5.1
Quality assurance label	4		3	7	4.5
Halal certificate	4	1		5	3.2
Freedom from antibiotics	2		3	5	3.2
Intended use	4	1		5	3.2
Size	1	2	1	4	2.5
Available as individual parts			2	2	1.3
Raised in a humane way			1	1	0.6
Competitive price		1		1	0.6
Prepacked			1	1	0.6
Country-of-origin		1		1	0.6
	157				

The two variables that respondents most often associated with environmental stewardship included organically raised (53.9%) and freedom from chemicals and growth promotants (49.4%) (Table 10.29).

Freedom from antibiotics (30.5%), raised on local farms (25.3%) and raised in a humane way (20.8%) were also perceived as having some positive impact on the environment.

Issues regarding Halal such as the availability of a Halal certification (6.5%) and appropriate slaughter (5.2%) were seldom cited by respondents in linking fresh/chilled beef production with environmental stewardship. Likewise, competitive price (0.6%) was seldom linked with concern for the environment.

Table 10.29: The association between criteria utilised in the decision to purchase fresh/chilled beef that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organically grown	45	19	19	83	53.9
Freedom from chemicals/growth promotants	23	33	20	76	49.4
Freedom from antibiotics	18	15	14	47	30.5
Grown on local farms	19	15	5	39	25.3
Raised in a humane way	15	9	8	32	20.8
Freshness	7	3	3	13	8.4
Halal certificate	8	1	1	10	6.5
Country-of-origin	4	2	2	8	5.2
Appropriately slaughtered (Halal)	6		2	8	5.2
Quality assurance label	2	5		7	4.5
Leanness	3	1	3	7	4.5
Clean/no flies	2	1	3	6	3.9
Flesh colour		2	1	3	1.9
Smell/odour		1	2	3	1.9
Label/brand	1	2		3	1.9
Marbling/fat content		1	1	2	1.3
Intended use			2	2	1.3
Skin colour	1	1		2	1.3
Competitive price		1		1	0.6
	154				

Cattle grown on local farms (43.5%) and raised in a humane way (39.5%) were the most frequently cited associations respondents made between the purchase of fresh/chilled beef and protecting worker welfare (Table 10.30).

Other variables mentioned by respondents included freedom from chemicals or growth promotants (29.9%) and organically grown (22.4%).

With regards to worker welfare, variables describing the physical appearance of the meat such as freshness (4.8%), smell/odour (2.0%) and flesh colour (2.0%) were seldom cited by respondents. Competitive price (2.0%) and value for money (0.7%) were also perceived to have little association with enhancing worker welfare.

Table 10.30: The association between criteria utilised in the decision to purchase fresh/chilled beef that protects worker welfare

Desired outcome 7: The food has been produce in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Grown on local farms	37	19	8	64	43.5
Raised in a humane way	35	14	9	58	39.5
Freedom from chemicals/growth promotants	17	18	9	44	29.9
Organically grown	10	11	12	33	22.4
Appropriately slaughtered (Halal)	11	1	8	20	13.6
Freedom from antibiotics	4	6	8	18	12.2
Country-of-origin	7	4	5	16	10.9
Quality assurance label	2	8	1	11	7.5
Clean/no flies	2	4	3	9	6.1
Halal certificate	8	1		9	6.1
Freshness	4	1	2	7	4.8
Prepacked	3	2	1	6	4.1
Available as individual parts	1	3	1	5	3.4
Label/brand	1	2		3	2.0
Competitive price	2	1		3	2.0
Smell/odour		1	2	3	2.0
Flesh colour		1	2	3	2.0
Intended use	1		1	2	1.4
Value for money	1			1	0.7
Skin colour	1			1	0.7
Marbling/fat content		1		1	0.7
	147				

With regards to ensuring that the meat was guaranteed Halal, a Halal certificate (81.1%) and appropriate slaughter (73.6%) were the variables most often cited by respondents (Table 10.31).

A quality assurance label (28.9%) and the country-of-origin of the fresh/chilled beef (18.2%) were the two other variables respondents most often associated with guarantees that the meat was Halal. A competitive price (0.6%) and the physical appearance of the product such as freshness (2.5%), flesh colour (1.9%) and skin colour (0.6%) were mentioned by only a few respondents as signalling that the meat was guaranteed Halal.

Table 10.31: The association between criteria utilised in the decision to purchase fresh/chilled beef that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	Ranking			N	%
	1	2	3		
Halal certificate	75	47	7	129	81.1
Appropriately slaughtered (Halal)	69	35	13	117	73.6
Quality assurance label	4	18	24	46	28.9
Country-of-origin	6	9	14	29	18.2
Label/brand	1	3	5	9	5.7
Grown on local farms		2	6	8	5.0
Clean/no flies		1	5	6	3.8
Raised in a humane way	2	1	2	5	3.1
Freshness	1		3	4	2.5
Flesh colour	1		2	3	1.9
Available as individual parts		1		1	0.6
Freedom from chemicals/growth promotants			1	1	0.6
Organically grown			1	1	0.6
Competitive price		1		1	0.6
Smell/odour			1	1	0.6
Skin colour		1		1	0.6
Intended use		1		1	0.6
Prepacked			1	1	0.6
	159				

The importance of the desired values were then ranked by respondents. Five desired values had a similar influence on the respondents' decision to purchase fresh/chilled beef: the food had to be guaranteed Halal, safe to eat, healthy and nutritious, good tasting and provide a good texture or mouth feel (Table 10.32).

Table 10.32: Importance of criteria respondents use in their decision to purchase fresh/chilled beef in a retail store

	Mean	SD
The food is guaranteed Halal	5.93[a]	0.37
The food is safe to eat	5.86[a]	0.41
The food is healthy and nutritious	5.78[a]	0.48
The food has a good taste	5.67[a]	0.60
The food had good texture/mouth feel	5.65[a]	0.62
The food represents value for money	5.48[b]	0.87
The food has been produced in a way that is good for the environment	5.21[c]	0.98
The food has been produced in a way that protects worker welfare	5.03[d]	1.11

where 1 is "not at all important" and 6 is "very important"

those items with the same superscript are not significantly different at p = 0.05

As expected, environmental issues and worker welfare issues were the least important values in the respondents' decision to purchase fresh/chilled beef.

Some 32.1% of respondents were always dissatisfied with the Halal status of the fresh/chilled beef that they purchased (Table 10.33).

Table 10.33: Occasions where respondents felt unhappy with the quality of fresh/chilled beef purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 184	58.7	4.9	0.5	1.1	1.1	1.6	32.1	1.0	1.0
The food is safe to eat. N = 185	45.9	17.8	1.6	2.7	2.7	5.9	23.2	1.0	2.0
The food is healthy and nutritious. N = 185	37.3	24.3	4.9	2.7	2.2	7.0	21.6	1.0	2.0
The food represents value for money. N = 186	29.0	26.3	10.8	3.8	3.2	7.5	19.4	1.0	2.0
The food has good texture/mouth feel. N = 186	32.8	28.0	5.9	2.2	4.8	8.1	18.3	1.0	2.0
The food has a good taste. N = 187	30.5	33.2	5.3	2.7	3.2	8.0	17.1	2.0	2.0
The food has been produced in a way that protects worker welfare. N = 182	38.5	23.1	7.1	6.0	2.7	8.2	14.3	1.0	2.0
The food has been produced in a way that is good for the environment. N = 183	40.4	21.9	7.7	3.8	4.9	7.7	13.7	1.0	2.0

where 1 is "Never", 2 is "One in ten times", 3 is "One in five times", 4 is "One in four times", 5 is "One in three times", 6 is "One in two times" and 7 is "Every time".

A total of 23.2% of respondents were often disappointed with the food safety level of the fresh/chilled beef purchased, while 21.6% of respondents were often disappointed with the health and nutrition of the meat. Other desired values that were challenging and difficult to satisfy when purchasing fresh/chilled beef included good value for money (19.4%), good texture/mouth feel (18.3%) and good taste (17.1%). Some 14.3% of respondents were always dissatisfied with the way in which cattle were raised so as to protect worker welfare and the environment (13.7%).

Nevertheless, most respondents (63.7%) had hardly ever or, in the worst case, only one time in ten, had an unpleasant experience with regard to poor taste and food safety, while 63.6% of respondents had hardly ever had an unpleasant experience with the Halal status of the fresh/chilled beef they had purchased from a retail store. Respondents were found to have hardly ever had an unpleasant experience with fresh/chilled beef that promised to protect the environment (62.3%), provide good health and nutrition (61.6%), enhance the welfare of farm workers (61.6%) or provide a good texture/mouth feel (60.8%). Over half of the respondents interviewed (55.3%) had never or only very occasionally had an unsatisfactory experience with the purchase of fresh/chilled beef that did not deliver good value for money.

On those occasions where respondents were dissatisfied with their purchase of fresh/chilled beef, their major complaints related to the perceived lack of freshness (Table 10.34).

For some 36.3% of the respondents, the fresh/chilled beef available in the market was considered too expensive. Other reasons for dissatisfaction were primarily related to the physical condition of the meat: sometimes it was smelly (34.1%), the texture was poor (28.1%), the meat contained a lot of fat (24.4%), or the colour of the meat was pale (22.9%). Respondents were also dissatisfied when the fresh/chilled beef was displayed in an unclean area (17.0%), when it did not taste good (15.6%), and when the Halal logo was not displayed in the retail outlet (14.1%). Respondents were disappointed when the origin of the fresh/chilled beef

was unknown (9.6%), or the meat was believed to contain growth promotants, artificial colouring agents or preservatives (9.6%).

Table 10.34: Reasons for dissatisfaction with the quality of fresh/chilled beef

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Not fresh	57	20	13	4	1	95	70.4
Price	12	14	15	4	4	49	36.3
Smelly	20	11	8	2	5	46	34.1
Bad texture	10	13	4	5	6	38	28.1
Contains a lot of fat	6	9	12	4	2	33	24.4
Pale colour	7	12	6	5	1	31	22.9
Not clean	3	7	6	7		23	17.0
Taste	7	5	1	7	1	21	15.6
Halal certificate not displayed	9	3	1	2	4	19	14.1
The origin of the meat is unknown	4	1	3	3	2	13	9.6
Contains growth promotants/colouring/preservatives		5	4	4		13	9.6
Packaging		2	1	2		5	3.7
Size		2			1	3	2.2
Unfriendly vendors /No cut and clean service available			1	2		3	2.2
Not kept in chilled display area		1	1			2	1.5
No label			1	1		2	1.5
Wastage			1			1	0.7
	135						

10.4 General view of fresh/chilled meat purchased

This section seeks to: (1) identify the extent to which consumers' expectations are fulfilled upon consumption of the product; and (2) to identify the extent to which consumers adjust their expectations in response to their dissatisfaction.

The results presented to date for both fresh/chilled chicken and fresh/chilled beef reveal that respondents generally experience some dissatisfaction with the quality of the fresh/chilled meat they have purchased but only on an occasional basis. When respondents are dissatisfied, most hold themselves responsible for their poor choice and suggest that they will be more selective on the next occasion that they purchase fresh/chilled meat (Table 10.35).

Table 10.35: What respondents do when dissatisfied with quality of fresh/chilled meat purchased from a retail store

	Mean	SD
I am more selective the next time I buy	5.69[a]	0.72
I am always satisfied with my purchase	4.84[b]	1.13
I inform/complain to the seller	4.79[b]	1.32
I change shops	4.76[b]	1.23
I return it to the shop	4.34[b]	1.53
I change brands	4.26[c]	1.59
I purchase less	3.98[d]	1.68
I throw them out	3.88[d]	1.81
I stop buying	3.81[d]	1.82
I just eat it/ cook it	2.21[e]	1.57
I do nothing	1.99[e]	1.51

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

Besides blaming themselves, some respondents indicated that they would complain to the vendor, purchase a similar product from another shop or return the meat to the retailer. Very few respondents indicated that they would do nothing.

With regard to food safety issues, most respondents were relatively confident that the fresh/chilled meat they had purchased was safe to eat (Table 10.36).

Table 10.36: Confidence level

	Mean	SD
How confident are you that the fresh/chilled meat that you consume are safe to eat	5.08	0.89

where 1 is "Not at all confident" and 6 is "Very confident"

More than one half of the respondents indicated that they would be confident that the product was safe to eat if it was guaranteed to be Halal (52.8%) (Table 10.37).

Freshness (38.9%) and cleanliness (37.4%) were the next most frequently cited variables that implied the meat was safe to eat. The label or brand (20.1%) and trusted vendors (18.9%) provided additional assurances. Furthermore, respondents could rely on the smell (16.9%) and colour (14.9%) of the meat to reassure themselves.

Table 10.37: Factors which lead respondents to conclude that the fresh/chilled meat purchased were safe or not safe to eat

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Halal	80	26	10	14	4	134	52.8
Fresh	26	29	32	8	4	99	38.9
Cleanliness	13	34	32	11	5	95	37.4
Label/brand	17	13	13	6	2	51	20.1
Vendors – friendly and knowledgeable	22	11	9	3	3	48	18.9
Smell	11	10	7	12	3	43	16.9
Quality	4	20	4	5	6	39	15.4
The way the chicken/cattle is being slaughtered	8	13	8	6	2	37	14.6
Colour	8	6	14	6	3	37	14.6
Freedom from chemicals/ preservative	7	5	3	9	8	32	12.6
A prestige shop	9	11	4	5	3	32	12.6
The texture of the meat at point of sale	3	9	6	8	4	30	11.8
The origin of the meat is known	7	7	8	2	2	26	10.2
I am confident with my choice	9	7	3	3		22	8.7
Organic	8	3	1	1	2	15	5.9
Taste	6	4	2	1		13	5.1
How chicken/cattle is raised is unknown	3	5	2	1		11	4.3
Nicely packed	2	4	3	2		11	4.3
Chilled storage is available		1	4	4		9	3.5
News from newspaper/Internet/ friends	4	3	2			9	3.5
No choice	2	2	1		1	6	2.4
Price			2	1	3	6	2.4
Near my house	3				1	4	1.6
I need to be more careful	2					2	0.8
I change menus					1	1	0.4
	254						

Most respondents were very confident with how the Malaysian government was managing Halal food requirements (Table 10.38).

Similarly, most respondents were very satisfied in the way the Malaysian government managed issues such as the country-of-origin, labelling foods that had been produced in a sustainable manner, organically produced food, fair trade, functional foods and probiotics and animal welfare. However, they were less

confident about the way in which the Malaysian government was managing chemical residues in food.

Table 10.38: Confidence level how Malaysian government manages the following

	Mean	SD
Halal	5.10[a]	1.04
Country-of-origin	4.42[b]	1.08
Sustainable production	4.22[b]	1.15
Organically produced food	4.18[b]	1.21
Fair trade	4.02[b]	1.21
Functional foods/probiotics	4.00[b]	1.17
Animal welfare	3.91[b]	1.22
Recycling packaging	3.82[c]	1.29
Conservation biodiversity	3.79[c]	1.18
Hormones, antibiotics and growth promotants	3.60[d]	1.33
Waste management	3.58[d]	1.24
Water pollution	3.56[d]	1.26
Microbial contamination	3.37[e]	1.31
Genetically modified fruit and vegetables	3.28[f]	1.34
Chemical residues	3.15[g]	1.42

where 1 is "Not at all confident" and 6 is "Very confident"
those items with the same superscript are not significantly different at p = 0.05

Most respondents (86.6%) indicated that at some point in time they had avoided or boycotted a particular food product due to food safety concerns (Table 10.39).

Table 10.39: Avoided or boycotted a particular food product due to food safety

	N	%
Yes	220	86.6
No	34	13.4
	254	

For most respondents (65.3%), the boycott on a particular food product was only on a temporary basis (Table 10.40).

Table 10.40: Methods of boycotting

	N	%
Temporary	124	65.3
Permanent	66	34.7
	190	

However, some 34.7% of respondents indicated that their decision to boycott a particular food could be permanent if it could be demonstrated that the food was not safe to consume.

Not expectedly, the main reason for boycotting a particular food product was the respondents concern about either food safety (22.9%) or the failure of the product to meet Halal requirements (22.5%) (Table 10.41).

Table 10.41: Reasons for boycotting

	N	%
Until proven safe to eat	72	22.9
Halal issues	71	22.5
Seasonal disease: bird flu, mad cow disease, hand and mouth disease, SARS.	33	10.5
Current issues in newspaper, television	27	8.6
Too expensive	24	7.6
Quality of the product	22	6.9
Clean	21	6.7
Health/well-being	17	5.4
Origin of the food	13	4.1
China products	12	3.8
Government instruction	3	0.9
	315	

Other reasons cited by respondents to avoid or to boycott particular food products included global pandemics such as bird flu, mad cow disease and SARS (10.5%) or other food safety incidents as frequently reported by the media (8.6%). A few respondents felt a need to boycott a particular food product when they thought that the price was too high (7.6%).

10.5 Review

The analysis demonstrated that the consumption of fresh/chilled chicken in the Klang Valley was higher than fresh/chilled beef. Furthermore, respondents purchased fresh/chilled chicken more frequently than fresh/chilled beef. This result concurs with the FAO (2007), who demonstrated that in 2003, the per capita consumption of poultry in Malaysia was 33.8 kg compared to 5.8 kg for beef. In 2006, the USDA acknowledged that Malaysia had one of the highest per capita

consumption rates in the world for chicken (Malaysia Poultry and Products Annual 2006). Norimah et al. (2008) reported that chicken meat was among the top 10 foods consumed weekly by Malaysians. According to Tey et al. (2008a), the motives behind the high per capita consumption of poultry relative to beef were: (1) the lower price of poultry relative to other meat; (2) poultry is consumed by most Malaysians irrespective of religious and ethnic/affiliations; and (3) consumers increasing concerns about health. On the other hand, the frequency of purchasing beef increased during the festive seasons. Pride (n.d.) revealed that there was a strong demand for beef during the festive seasons in Malaysia.

Given that chicken are considerably smaller than cattle, there are differences in the preferred forms in which respondents most often purchase the two products. The analysis indicated that whole dressed chicken was the most preferred by consumers, followed by smaller portions such as chicken drumsticks and chicken breast. Since it is unrealistic for consumers to purchase and to transport a whole cattle carcass from a retail store, portions such as topside and beef cubes were those most often purchased by consumers. Although different cuts were available to meet the differing ways in which consumers intended to use the product, the cuts were priced differently (Tey et al. 2008a). Similarly, Othman et al. (2009) reported that boneless chicken meat was more highly priced.

The methods that respondents used to cook chicken and beef were very similar (fried, soup, curry, roasted or grilled). However, meat products have differences in the texture, tenderness and taste. Kennedy et al. (2004) and Brunton (2009) described chicken as versatile, quick and easy to prepare and cook. As for the purchase of fresh/chilled beef, consumers preferences for slight marbling, a lot of marbling or no marbling depended on the manner in which the respondent intended to cook the meat and which cuts were available (Egan et al. 2001). Goldman and Hino (2005) demonstrated how the intended method of cooking influenced the variables utilised by consumers to determine the quality of the meat they purchased.

In their decision to purchase both fresh/chilled chicken and beef, the top four most frequently cited variables (freshness, Halal, cleanliness and price) were similar. Freshness was closely related to product appearance, which subsequently emerged

as the most important factor influencing the decision to purchase fresh/chilled chicken (Kennedy et al. 2004; Bonne and Verbeke 2006). Grunert (1997), McCarthy and O'Reilley (1999), Becker (2000) and Bonne and Verbeke (2006) found that freshness was among the most important quality attributes of beef. Freshness of the meat was mainly judged by the colour (McCarthy and O'Reilley 1999; Kennedy et al. 2004). Odour was also an important indicator of freshness of the meat. However, when consumers were unable to use smell to judge freshness at the point of purchase, they must rely entirely on visual cues (Kennedy et al. 2004).

The Halal status of the meat was the next most frequently cited attribute mentioned by respondents as being influential in their decision to purchase fresh/chilled meat. Similar findings were presented by Bonne and Verbeke (2006), who identified the role of religion in the consumption of fresh/chilled meat. For fresh/chilled meat to be guaranteed Halal, it was closely related to the method of slaughter (a credence attribute) and the presence of an Halal certificate or label (an extrinsic cue). In the absence of an Halal label, trusting their preferred butcher at the point-of-purchase provided the desired assurances. Although the fresh/chilled meat available in most modern retail outlets was provided with a Halal quality label, several consumers were sceptical about purchasing chicken or beef from supermarkets.

Cleanliness and price were the other variables most frequently mentioned by respondents as influencing their decision to purchase fresh/chilled meat in a retail outlet. Ahmed (2008) required respondents to compare hygiene, price and quality between modern retailers and the traditional marketing channels when purchasing meat. The results indicated that modern retailers were more hygienic and offered better quality meat, but they were perceived to be more expensive. The issue of cleanliness was raised by consumers in Belgium, claiming that their preferred butcher was not hygienic (Bonne and Verbeke 2006). In purchasing meat, Japanese consumers were found to be more price conscious and utilised price as an important indicator of quality (Egan et al. 2001).

Several other credence attributes which included freedom from disease and freedom from chemicals and growth promotants were the least cited variables by respondents in their decision to purchase both meat products. McEachern and

Schroder (2002) revealed that consumers' meat choice criteria were based on tangible criteria such as freshness, cleanliness and price, rather than intangible characteristics such as animal welfare and the use of additives in meat production.

Although the country-of-origin of the fresh/chilled chicken they intended to purchase was infrequently cited by respondents, respondents were more concerned about where the fresh/chilled beef they intended to purchase had come from. Tey et al. (2008a) reported that besides price and the availability of different cuts, Malaysian consumers have to consider the origin of the meat in their decision to purchase beef as they were able to choose beef that was locally raised, imported beef from Australia, America and India, or hybrid meat (imported cattle raised locally).

A total of eleven variables were identified to be of equal importance to respondents in their decision to purchase both fresh/chilled chicken or beef (Table 10.42)

Table 10.42: Importance of variables influencing respondents' decision to purchase fresh/chilled meat

Fresh/chilled chicken	Fresh/chilled beef
Appropriately slaughtered (Halal)	Appropriately slaughtered (Halal)
Freshness	Halal certificate
Halal certificate	Freshness
Smell/odour	Clean/no flies
Clean/no flies	Smell/odour
Flesh colour	Flesh colour
Skin colour	Quality assurance label
Quality assurance label	Competitive price
Value for money	Value for money
Competitive price	Freedom from chemicals/growth promotants
Freedom from chemicals/growth promotants	Freedom from antibiotics

Variables were grouped under themes which included Halal (appropriate slaughter and Halal certificate), the physical appearance of the meat (freshness, smell/odour, clean/no flies, flesh colour), extrinsic indicators (quality assurance label, competitive price and value for money), and the safety of the meat (freedom from chemicals/growth promotants). The only differences identified between the two meat products was skin colour, which was considered to be an important variable

for respondents in their decision to purchase fresh/chilled chicken and freedom from antibiotics for beef.

In qualitative research, Kennedy et al. (2004) demonstrated the importance of skin colour to respondents in their decision to purchase fresh chicken. The colour of the skin should be bright pink rather than dull brown if it is to be attractive to consumers. Similarly, beef that was considered to be free from antibiotics was considered to be more influential for respondents in their decision to purchase fresh/chilled beef. This was surprising, for Khor (n.d.) reported that 51.0% of the chicken sold in Malaysia contained cancer-causing nitrofuran. Similarly, the Ministry of Health found that half of the chicken samples bought from various towns and cities across Malaysia contained nitrofuran at levels 4,000 times higher than the Veterinary Department's safe level. Nik Anis (2009) reported that occasionally Malaysia imports chicken meat from countries such as China to ensure enough supply for the Chinese New Year. Apparently, consumers have no need to worry, for the two plants in Shandong, China, are regularly inspected by the Department of Veterinary Services and JAKIM to ensure that their operations are compliant with Halal and food safety requirements.

Prepacked chicken and beef was one of the least important variables influencing the respondents' decision to purchase meat in a retail store. These results were consistent with the preliminary findings from the focus group discussions where respondents preferred to purchase meat that was not prepacked. According to Resurreccion (2003), prepacked meats are value-added products. While it represents convenience in meeting the demands of time-poor consumers, shoppers in Malaysia still prefer to touch the meat before purchase (Zinkhan et al. 1999; Hsu and Chang 2002).

Principal component analysis identified four constructs which influenced respondents' decision to purchase fresh/chilled chicken in a retail store and five constructs for fresh/chilled beef (Table 10.43).

Table 10.43: Factors influencing respondents decision to purchase fresh/chilled meat

Fresh/chilled chicken	Fresh/chilled beef
Physical appearance and Halal requirements Price and value Poultry production	Intrinsic cues of the product and Halal Price and value Cattle production Functional quality

As a beef carcass is very different from a chicken carcass, an additional construct, functional quality, emerged with regard to the purchase of fresh/chilled beef. The importance of Halal and criteria which described the physical appearance of the product were the two constructs highlighted as being the most important for respondents in their decision to purchase both fresh/chilled chicken and beef, followed by price and value, and the manner in which the animals had been raised.

Several agencies, including JAKIM, the Department of Standards Malaysia, the Institute of Islamic Understanding Malaysia and the Malaysian Institute and Industrial Research and Standard (SIRIM) have developed a comprehensive Halal food guideline known as MS1500:2004 (Talib et al. 2008). Under these guidelines, the concept of Halal is described in detail, according to the type of food involved. For poultry and meat products, Halal involves adopting appropriate methods of slaughter according to Islamic rules. According to Shafie and Othman (2006), the Islamic method of slaughtering must be performed by a Muslim, and the animal must be from that group of animals Muslims are allowed to eat. Additionally, the animal must be alive at the time of slaughter, slaughter must be done with a sharp device, and the animal's respiratory tract, oesophagus and jugular vein must be severed. The concept of Halal also covers the storage, display and preparation process, where Halal food should not be stored together with non-Halal food, and hygiene, sanitation and food safety, which includes aspects of personal hygiene, clothing, equipment and the working premises for processing the food (Department of Standards Malaysia 2004).

In ensuring that the fresh/chilled meat was Halal, respondents highlighted the need to have a Halal logo, label or certificate. Shafie and Othman (2006) revealed that a Halal label and certificate was used to inform and to reassure consumers that the

food product was Halal. Without the presence of these value-added attributes, there may be some doubt that the fresh/chilled meat available from a retail store was Halal. However, many challenges were raised by consumers and food producers as to the inconsistency of the slaughtering method, the use and abuse of the Halal label, expired Halal certificates, unhygienic processing premises, and the lack of enforcement by authorities to ensure that the food was Halal (Shafie and Othman 2006; Talib et al. 2008).

The importance of examining the intrinsic cues or the physical attributes of the meat, the smell, cleanliness and flesh colour were other factors which were as equally important to respondents in their decision to purchase fresh/chilled meat products in a retail store. Resurreccion (2003) confirmed that European consumers were heavily influenced by the appearance (fat content and colour of the meat) in their decision to purchase. de Carlos et al. (2005) described the intrinsic cues as the cut, colour, marbling, fat content and fat rim. Krystallis and Arvanitoyannis (2006) suggested that consumers described the quality of meat by judging its freshness, leanness and bright red colour.

Again, because of significant differences in the product form, skin colour was found to be an important intrinsic cue for chicken meat, but it did not appear to influence the respondents decision to purchase fresh/chilled beef. However, Kennedy et al. (2005) investigated how the preferences for poultry skin colour varied across regions and cultures. According to Fletcher (1999), European consumers prefer poultry meat with less colour, such as a pale or pinkish colour, compared to consumers from the United States. Sunde (1992) confirmed that consumers in the United States preferred a yellowish broiler skin and meat, which signified superior quality and freshness, and was an indicator of the bird's health.

The cost of purchasing fresh/chilled chicken or beef was important to most respondents. Price appeared to be an important cue when consumers did not possess enough information about the intrinsic quality (Acebron and Dopico 2000). However, this study did not intend to measure any association between price and respondents perceptions of meat quality. Respondents were not required to specify the price they normally paid to purchase either or both products. Nevertheless, price

did have some influence on the respondents' decision to purchase fresh/chilled meat. The price of both meats fluctuates throughout the year. Both meats are much more expensive during the festive seasons. For example, standard chicken, super chicken, local beef and imported buffalo meat are among the 17 items included in the price control regulations implemented by the Malaysian government during the major festive seasons such as Eid, Chinese New Year and Deeepavali (Price control in Malaysia for Chinese New Year 2006). Due to the high price of fresh/chilled beef, most respondents associate the consumption of beef with special occasions such as family gatherings or wedding feasts.

To compare between both meat products, Brunton (2009) indicated that the imagery of chicken was centred on value for money, a routine purchase and appeal among children. Furthermore, the reasonable price of chicken meat motivates consumers to purchase more chicken over other meats. Ritson and Hutchins (1991) [cited in McCarthy et al. (2003)] report that the consumption of beef is expected to increase with an increase in household income. This suggests that beef is a luxury product. By comparing beef with other meats like chicken and pork, beef did not represent good value for money as it was considered "expensive" (McCarthy et al. 2003).

In the purchase of fresh/chilled meat, respondents showed little concern towards the manner in which the poultry and cattle had been raised. This finding concurred with research conducted by Idrus [cited in Azhari (2010)] which revealed that Malaysians' awareness of livestock welfare was practically zero. In most developing countries, including Malaysia, the government gives priority towards the provision of sufficient food to feed the population, rather than to concern itself with animal welfare. Even in Scotland, McEachern and Schroder (2002) demonstrated that consumers were more concerned about price and product appearance, rather than production and ethical matters. In Malaysia, very little information is available with regards to how and where the chicken and cattle were raised, although it was reported earlier that respondents have shown their desire to learn more. In the Ninth Malaysia Plan (2006), it was reported that the usage of chemicals and hazardous substances have increased in the agricultural sector (Ahmad and Juhdi 2008). This may explain, in part, why respondents were more concerned about the usage of chemicals, growth promotants and antibiotics at the

farm level. Batt et al. (2006) reported that in Asia, information such as country-of-origin was perceived to be the most important information consumers required. In the absence of such product information, many consumers may choose to purchase their fresh/chilled meat from traditional markets where they rely heavily on the trust developed from their long-term relationships with vendors (Goldman and Hino 2005).

Vermeir and Verbeke (2004) [cited in Ahmad and Juhdi (2008)] report that consumers usually give priority to other factors such as health, rather than concerns towards the environment or benefits to society from the purchase of organic food products. Ahmad and Juhdi (2008) revealed that in Malaysia, relating organic food to consumers' attitudes towards the environment was still relatively new and very few consumers were aware of this. Furthermore, very few consumers had expressed any desire to support more sustainable production. Price and affordability were among the reasons given by consumers for not purchasing products that were considered sustainable. Although some consumers expressed their concern for the environment and animal welfare, given that organic meats are more expensive than conventionally produced meat and the quality of the meat is similar, this may discourage consumers from purchasing ethically produced meat (McEachern and Schroder 2002). However, Krystallis et al. (2006) reported that the number of consumers who are willing to pay more for environmentally friendly products is increasing.

The availability of purchasing food that was organically grown was also another problem faced by consumers in Malaysia. According to Shamsudin and Selamat (2005), organic food is mainly sold in supermarkets and hypermarkets. These types of products are hardly ever found in traditional retail outlets. Similar findings were reported by Ahmad and Juhdi (2010), who demonstrated that the most common places to purchase organic food around the Klang Valley was from supermarkets and health food stores. Due to the non-availability of the product, Ahmad and Juhdi (2010) found that almost half of the respondents had no knowledge regarding the place of purchase for organic products.

Variables such as the label or brand, size and intended use, collectively described the "functional quality" of the fresh/chilled beef purchased. However, this was the least important construct for respondents in their decision to purchase fresh/chilled beef from a retail store. In the poultry sector, brand names are mainly associated with processed products such as chicken frankfurters, chicken burgers and nuggets, carrying well-known brand names such as Ayamas, Ayam Dindings and Farm's Best (Malaysia Poultry and Products Annual Overview 2005). Given that this study did not investigate consumers' attitudes toward processed and frozen chicken products, brand names were seldom mentioned as having any influence in the respondents' decision to purchase fresh/chilled chicken. As 70.0% of the chickens sold in Malaysia are through traditional markets (Malaysia Poultry and Products 2006), consumers preferred to purchase freshly slaughtered chicken rather than frozen chicken meat. Furthermore, chicken meat sold from the traditional market seldom carries any brand name. It is also uncommon to see prepacked chicken products in most traditional markets in Malaysia. Thus it comes as no surprise to find that this construct had little influence on the respondents' decision to purchase fresh/chilled chicken.

In contrast, consumers appreciate more the value of labelling for fresh/chilled beef. Roosen et al. (2001) reported that consumers in France and Germany placed a higher level of importance on brands as an indicator of the quality of the meat they intended to buy. Besides, the European Union (EU) recently enacted mandatory labelling which must indicate the place of production and slaughter to ensure the traceability of beef products. Grunert (1997) and Bredahl et al. (1998) revealed that consumers had difficulties forming quality expectations when purchasing unbranded meat. Although the amount of fat was an important cue, it was more commonly related to tenderness and taste. Grunert (2002) explained how brand was seen as a special quality cue that consumers could relate to based on their previous purchase experience. Given that there were many sources of fresh/chilled beef available in most retail outlets in Malaysia (Tey et al. 2008a), the importance of labelling or brand name, which indicated both the Halal status and the country-of-origin of the beef, were more influential in the respondents' decision to purchase.

Similar groups of variables were associated with different sets of desired values for both fresh/chilled chicken and beef. Freshness and the physical appearance of the meat, which included smell/odour, flesh colour and skin colour, clean/no flies and leanness, were among the variables most frequently cited by respondents as leading them to believe that the meat had a good taste and good texture (Table 10.44).

Although similarities existed between both meats, the discussion in the literature regarding how these groups of variables were related to the desired outcomes were found to be different for each meat. Similar to the findings of this study, Kennedy et al. (2004) discovered a relationship between colour (product appearance) and taste (sensory attributes) in the purchase of chicken. Kennedy et al. (2004) mentioned that in purchasing fresh/chilled chicken from a retail store, consumers utilised the intrinsic quality cues, which consisted of appearance, colour, freshness and leanness, to reflect other functional attributes (taste and healthfulness). For fresh/chilled beef, Carpenter et al. (2001) agreed that the colour of the meat, particularly bright red, positively affected consumers' likelihood of purchasing the product. However, beef colours, whether its red, purple or brown, did not affect in the taste of the meat. Carpenter et al. (2001) suggested that the consumers' eating satisfaction depended on other criteria such as tenderness, juiciness and flavour.

Table 10.44: Group of variables respondents relate with good taste and good texture/mouth feel

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food has a good taste	Freshness Physical appearance: smell/odour, flesh colour and skin colour Clean/no flies.	Freshness Physical appearance: flesh colour, smell/odour Physical appearance: skin colour, clean/no flies, leanness
The food has good texture/mouth feel	Freshness and physical appearance such as smell/odour, flesh colour, skin colour Organically grown, leanness, clean/no flies. Marbling, fat content	Freshness Physical appearance: flesh colour, smell/odour Physical appearance: fat content, leanness.

Egan et al. (2001) found that the taste of beef was related to smell and other variables such as fat and texture or juiciness of the meat. The relationship between

taste and smell was also reported by Liu et al. (2006), where consumers in China placed these two variables as among the most important attributes when purchasing beef. McCarthy et al. (2003) revealed how taste, appearance and sensory attributes contributed to the consumers' level of 'eating enjoyment'.

In relating the fat content of the meat with good taste and good texture/mouth feel, Glitsch (2000) found that the texture of the meat (tenderness) for beef was more important to consumers in European countries, rather than leanness. Egan et al. (2001) mentioned that the eating quality of beef may improve through marbling because of increased juiciness and flavour. Glitsch (2000) also demonstrated that leanness was more often associated with the purchase of chicken meat. Similarly, Kennedy et al. (2005) found that leanness (less fat content) was one of the main reasons why consumers chose chicken over red meats.

Extrinsic cues which were related to the country-of-origin and how the chicken/cattle were raised were among the variables least often cited by respondents as having any association with how the food tasted or the texture of the meat. These findings were similar to Northern (2000), who suggested that although both intrinsic cues and extrinsic cues were utilised by consumers in assessing the quality of meat, intrinsic cues such as colour and leanness were considered more reliable than extrinsic cues. These findings, however, were not consistent with those found by Kennedy et al. (2005). Kennedy et al. (2005) found that how the chicken was raised (wheat-fed chicken or corn-fed chicken) influenced the fattiness, tenderness and flavour of the meat. Given that the colour of corn-fed chicken is more yellowish, consumers perceived the chicken to be fatty (full of fat) and unappetising. In the purchase of fresh/chilled beef, Beriain et al. (2009) demonstrated how consumers in Spain found that US beef was juicier, tastier, more intensely flavoured and more tender than Spanish beef.

Freedom from chemicals/growth promotants and appropriate slaughter were the two most frequently cited variables which were believed to indicate that the fresh/chilled meat was safe to eat (Table 10.45).

Table 10.45: Group of variables respondents relate with food safety

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food is safe to eat	Freedom from chemicals/growth promotants Appropriately slaughtered (Halal) Freedom from antibiotics, Halal certificate, clean/no flies. Quality assurance label, freshness, organically grown	Appropriately slaughtered (Halal), freedom from chemicals/growth promotants Clean/no flies, freshness, freedom from antibiotics, Halal certificate. Quality assurance label, smell/odour, organically grown.

Issues relating to the usage of chemicals and growth hormones in both poultry and cattle production have raised concerns among Malaysian consumers. Aini (1990) reported that there was a heavy demand for village chicken, popularly known as *ayam kampong* in Malaysia. Aini (1990) mentioned that village chicken were breed in a traditional village-based system (free-range system) which required minimal resource input (natural feeding where chickens are free to find their own food and free from growth hormones). As a result of a more natural rearing system, Oh (1987) [cited in Aini (1990)] believed that the meat and eggs from these chickens was safer to eat and more tasty than commercial chicken meat. Shaharudin et al. (2010) confirmed that because non-organic chicken rearing involved the use of antibiotics, vaccines and growth promotants to accelerate the rate of maturity, it was unhealthy and unsafe for consumption. In responding to the consumers' concerns towards the usage of chemicals in raising chicken, a local company in Malaysia was reported to have replaced antibiotics with herbs in the chickens' diet (Asia's First Antibiotic-Free Eggs Using Herbs 2010).

For both meat products, freedom from any chemicals, growth promotants or antibiotics in poultry and cattle production was most often associated with organically grown meat. O'Donovan and McCarthy (2002) found that chicken was the most popular choice of organic meat. However, Fanatico (2008) summarised several research outputs that both agree and disagree with the relationship between food safety and organically grown chicken. Due to absence of any chemical substances, Heuer et al. (2001) [cited in Fanatico 2008] found higher levels of campylobacter bacteria in organic broilers compared to conventional broilers.

Farina and de Almeida (2003) identified that free-range, natural and organic chicken have a higher likelihood of contracting salmonella. In contrast, Lunangtongkum et al. (2006) [cited in Fanatico 2008] found that campylobacter bacteria were more resistant to organically raised chickens than to conventionally raised chicken. For beef, Cowan (1998) [cited in McCarthy et al. (2003)] reported that 70.0% of consumers in Ireland were concerned about the presence of hormones and BSE when purchasing beef. In contrast, Acevedo et al. (2006) reported how organic grass-fed beef was produced and never treated with hormones, antibiotics, pesticides and chemicals.

The appropriate method of slaughter, which determines the Halal status of the fresh/chilled meat, was also associated with food safety. In ensuring that the meat is Halal, the slaughtering method of the chicken and cattle is similar. With reference to the Halal food guideline, the slaughtering act shall sever the trachea, oesophagus, carotid arteries and jugular veins to hasten the bleeding and death of the animal (Department of Standards Malaysia 2004). Jonsson et al. (2002) found that Somali women in Sweden, relied heavily on the role of religion (consuming Halal slaughtered meat) as a way to ensure that the food was safe to eat. Bonne and Verbeke (2008a) indicated that Muslim consumers believed that Halal meat was not only more safe, but it was also more wholesome. According to Bonne and Verbeke (2006), the slaughter method according to Islamic rules provides meat that contains less blood and thus there is less likelihood of bacterial contamination. The concept of Halal itself guarantees that the food has been handled in a manner that is both safe and hygienic (Department of Standards Malaysia 2004; Talib et al. 2008). According to Shaharudin et al. (2010), non-Halal vaccines given to chickens are unsafe to consume, thus describing the relationship between food safety and Halal.

The association between food safety and Halal is not only demonstrated among Muslim consumers, but often utilised by other consumers who follow other religions. Berry (2008) reported that non-Muslim consumers from European countries are purchasing Halal food products due to the perception that these products are safer. Golnaz et al. (2010) agree that Halal products are being accepted by non-Muslim consumers because they believed that the products were more safe and healthy. Cutler (2007) mentioned that the production of food that is Halal

involves stricter food safety measures. As a result, many food operators intended to implement Halal to reach a wider market.

The physical appearance of the meat such as cleanliness and freshness was also an indicator that the meat was safe to eat. Similarly, freshness was also a major criteria in assessing the safety of beef, pork and chicken among European consumers (Glitsch 2000). Anklam and Battaglia (2001) found that consumers' expected high quality food to be fresh, good looking, nutritious, wholesome, tasty and most importantly to be safe. Consumers' only major concern was that there was no direct means to verify that the food was safe to eat.

When consumers make comparisons between the impact of fresh/chilled chicken and fresh/chilled beef on their health, several differences were detected. Yeung and Morris (2001) indicated that chicken meat was considered to be more healthy than other meat. Verbeke and Viaene (2000) believed that beef holds an image of being less healthy. Nevertheless, some respondents mentioned that they eat beef because of its high nutritional value (Van Wezemael 2010). As Brunton (2009) suggested, beef is considered a good source of iron and protein.

Despite the differences, respondents tended to associate similar variables with healthy and nutritious meat (Table 10.46).

Table 10.46: Group of variables respondents relate with healthy and nutrition

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food is healthy and nutritious	Freshness, freedom from chemicals/growth promotants Organically grown, clean/no flies Flesh colour, freedom from antibiotics, leanness, fat content	Freshness Freedom from chemicals/growth promotants, flesh colour, clean/no flies, freedom from antibiotics, organically grown, leanness Smell/odour, marbling/fat content, appropriately slaughtered, quality assurance label.

Freshness was the most frequently cited variable which indicated that fresh/chilled meat was healthy and nutritious. The quantitative findings verified the preliminary findings where participants from the focus group discussions mentioned that the freshness of the fresh/chilled meat purchased from a retail store would lead to a more healthy meal. In a similar study, Kennedy et al. (2004) found that most female respondents who have positive attitudes towards their health and body weight relate the freshness of chicken meat with healthy food. Van Wezemael et al. (2010) found that consumers have a greater preference for fresh beef compared to processed and packaged beef, because freshness signals the healthfulness of the meat. de Carlos et al. (2005) concluded that freshness, healthiness and nutritional value of the meat could only be established after consumption. Moreover, consumers may seek brand names or labels attached to the package to provide additional information about health quality. However, in Malaysia, this may be difficult as the preliminary findings revealed that the majority of consumers dislike purchasing pre-packed meat. Most of the fresh meat sold in traditional retail outlets is unbranded and unlabelled.

Beside freshness, the appearance of the meat such as flesh colour, leanness and fat content were also linked to the respondents concerns about health and nutrition. Freshness and fat content were the two most important criteria used by consumers in the United States to evaluate the healthfulness of meat (Oakes and Slotterback 2002). Anders and Moser (2010) demonstrated how the fat content in meat products is an important attribute for consumers who are health conscious in Canada. Kennedy et al. (2004) agreed that the fat content and flesh appearance represent the healthfulness of chicken meat. Because of the leanness of the meat and good health reputation, regular chicken was viewed as a complement to extra lean beef (Anders and Moser 2010). In the purchase of fresh/chilled beef, Van Wezemael (2010) provides two different views on the relationship between health and the leanness of the meat. Most respondents agreed that the leanness of the beef indicates healthiness on the basis that: (1) beef is lean meat and therefore healthful; (2) it is normal to have fat on beef; (3) some beef cuts are leaner than others, which determines the healthiness of the meat, and (4) the healthiness of the beef should not be examined only by the fat content; consumers should also consider what additives may have been added to the meat during production. Krystallis and

Arvanitoyannis (2006) considered the threat of chemical residues, growth promotants and antibiotics in the meat to be of more concern than the high fat content or the threat of microbial infection. Nevertheless, Van Wezemael (2010) reported that some respondents believed that the fat content was quite high in beef, therefore beef was considered unhealthy. Given the relationship between the fat content of meat and healthy eating, Anders and Moser (2010) suggested that it is up to retailers to strategise and position meat products (regular and extra lean meat) according to the consumers' preferences.

The way the poultry and cattle were raised (freedom from chemicals/growth promotants, freedom from antibiotics and organically grown) were associated with healthy and nutritious meat. Farina and de Almeida (2003) demonstrated the association between healthy meat and the method of production when consumers perceived that eating free-range, natural or organic chicken was considered more healthy given the absence of steroids and antibiotics. Clemens (2003) confirmed how chicken that was raised in a conducive environment and given fresh herbs may produce healthy and flavourful meat. According to Stefani et al. (2008), eating chicken was perceived as unhealthy due to the presence of growth hormones and antibiotics used in the rearing process. In Malaysia, Yeoh (2007) reported that the Nutrition Society in Malaysia (NSM) recommended that consumers eat less chicken in their daily diet to remain healthy. According to the Consumers Association of Penang (CAP) [cited in Yeoh 2007], chicken meat produced to meet the demand during festive seasons had a higher risk given that these poultry were given antibiotics and growth hormones to accelerate their growth. Consumers with allergies may be affected when eating meat that contained these types of chemicals. Bernues et al. (2003) found that consumers in Europe related the methods of animal production with their concerns about health, nutrition and the safety of the red meat they consumed. Van Wezemael (2010) suggested a few methods to improve the healthiness of beef: (1) appropriate feeding of the animals (feed the cattle grass instead of chemicals) and (2) appropriate cattle rearing (cattle should be free and not tied in barns). Van Wezemael (2010) added that a stressed animal can easily catch diseases which produced unhealthy meat. In contrast, Marreiros and Ness (2002) were unable to establish any relationship between the healthiness of Protected Designation of Origin (PDO) beef, although consumers perceived this

type of meat more positively as it provided assurances of the system and region of production.

Competitive price and value for money were strong indicators in determining that the fresh/chilled meat the respondent intended to purchase represented good value for money (Table 10.47).

Table 10.47: Group of variables respondents relate with value for money

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food represents value for money	Competitive price Value for money, freshness, size Quality assurance label, available as individual parts, intended use, clean/no flies.	Competitive price Freshness, value for money, quality assurance label, size Label/brand, appropriately slaughtered, available as individual parts, intended use, Halal certificate.

According to Grunert (2005), the concept of value for money is justified by relating quality and price together. Grunert (2005) further explained that consumers are only willing to pay the price for a piece of meat when the quality of the meat is perceived sufficient to the amount spent. Egan et al. (2001) found that the price of beef was important to Japanese consumers given that low priced beef was often associated with lower quality. By comparing between both meat products, chicken was perceived to bring more value to consumers due to the cheaper price of the meat. In Malaysia, although the prices vary between cuts, the price of chicken meat is relatively cheaper than beef (Tey et al 2008a; Veru 2010). However, with the increase in chicken prices and no action from the government to control prices, the Consumers Association of Subang and Shah Alam (CASSA) anticipated that chicken meat would only be available for consumers who could afford to purchase the meat. Being sold at a higher price may not represent good value, particularly for lower income consumers. Mangen and Burrell (2001) and McCarthy et al. (2003) demonstrated how beef was often perceived as a luxury food item. In Japan, Peterson and Chen (2005) found that consumers perceived imported beef (US beef and Australian beef) to be a luxury good. Due to the higher price, beef was perceived to offer poor value for money compared to other meats such as chicken and pork. As beef was purchased less often, McCarthy et al. (2003) indicated that

consumers may have less experience. Furthermore, given that the quality of beef is also more variable, with less experience, consumers may encounter greater dissatisfaction and thus less utility. Only when there is a drop in the price or income increases, is the consumption of beef likely to improve (Egan et al. 2001; McCarthy et al. 2003; Tey et al. 2008a). Tey et al. (2008a) demonstrated the relationship between price with value for money, where higher income earners in Malaysia favoured hybrid or imported beef which is much more expensive than domestic bred beef, but is perceived to represent better value.

The size and the availability of individual parts were often associated with meat that represented good value for money. Although being sold at a much more expensive price, younger respondents had a strong preference for chicken fillet breast because this portion was versatile and convenient (Kennedy et al. 2004). For them, it was more time consuming to cook a whole chicken which contained a lot of bones and they may lose a lot of meat. For this group of consumers, buying a whole chicken was wasteful and opposed to the concept of providing value for money. In a similar case, Unnevehr and Bard (1993) explained that different cuts of beef created different levels of utility. The purchase of these different cuts was highly dependent on the household size and income to produce a meal that was perceived to represent good value for money. According to Egan et al. (2001), consumers preferred lean steaks of medium to large size. Steaks with more fat and marbling were often offered at a much higher price. Verbeke et al. (2005) reported that respondents were aware that superior quality meat such as beef was more expensive. Nevertheless, they expressed their dissatisfaction and claimed that it was deceiving when the meat reduced in size after cooking.

The intended use of the meat was also associated with meat that brought good value for money. This finding corresponds with Kennedy et al. (2004), where respondents mentioned that they could create more dishes with chicken meat. Stefani et al. (2008) indicated that the purchase of chicken represented good value for money because of the popularity of the meat among the household members and the ease with which the meat could be combined with other ingredients. Brunton (2009) agreed, mentioning that chicken meat is known to be a versatile, quick and easy to prepare and consumers were able to produce a wide variety of meals. Chicken had a

good value image as the meat was more appealing among children and well accepted by the whole family. In contrast, red meat was commonly associated with a higher fat content (Kennedy et al. 2004). When preparing the meat, some parts of the meat may need to be trimmed. As a result of this, red meat may not represent good value for money.

Quality assurance labels and brands were perceived to influence perceptions of value. Walley et al. (1999) revealed how consumers valued quality assurance labels as an important indicator of meat quality. Consumers preferred to purchase meat products which were quality assured rather than meat which was not. Kim and Boyd (2004) confirmed a strong correlation between country-of-origin, branding and labelling, and Korean consumers' perceptions of beef products. Branding captures value by differentiating the product and by providing an assurance of quality to consumers. The country-of-origin of the meat was seen as an indicator of quality, dependability and value for money. In contrast, country-of-origin was perceived to have a weak relationship to the value of both meat products in Malaysia.

Meat products that were organically grown, free from chemicals, growth promotants and antibiotics were perceived by respondents to be better for the environment and worker welfare (Table 10.48).

Table 10.48: Group of variables respondents relate with food that has been produced in a way that is good for the environment and protects worker welfare

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food has been produced in a way that is good for the environment	Organically grown Freedom from chemicals/growth promotants, freedom from antibiotics Grown on local farms, raised in a humane way	Organically grown, freedom from chemicals/growth promotants Freedom from antibiotics, grown on local farms, raised in a humane way Freshness, Halal certificate
The food has been produce in a way that protects worker welfare	Grown on local farms Raised in a humane way, freedom from chemicals/growth promotants, organically grown, freedom from antibiotics	Grown on local farms, raised in a humane way Freedom from chemicals/growth promotants, organically grown.

This means that respondents associate the production method for rearing poultry and cattle with meat that has been produced in a way that is good for the environment and worker welfare. From the literature, the discussion with regards to organic meat and the differences in the production methods for both chicken and beef are not significant (O'Donovan and McCarthy 2002; McEachern and Schroder 2002; McEachern and Willock 2004; Von Borell and Sorensen 2004). Consequently, their impact can be discussed in a collective manner.

Von Borell and Sorensen (2004, p. 3) described organic livestock production as: (1) production methods based on ecological principles (meeting all health regulations, working in harmony with the environment, building biological diversity and fostering healthy soil and growing conditions); (2) animals raised without the use of toxic persistent pesticides, antibiotics and parasiticides; and (3) organic meat produced from farms that have been inspected and meet strict standards which utilise organic feed and are concerned about animal welfare (access to outdoors, fresh air and sunlight). Overall, organic livestock production is considered sustainable for consumers, for the workers involved in the farming system, for the environment and for the animals. Hermansen (2001) found that those consumers who preferred organic meat placed more importance on health aspects and ethical issues such as concern for the environment as motives for their decision to purchase. According to the Ministry of Food, Agriculture and Fisheries in Denmark [cited in Hermansen 2001], the environmental aspects have been dominant with organic livestock production in most European countries. McEachern and Willock (2004) described the "naturalness" of organically produced meat saying that: (1) organic farming is the best method of ensuring a sustainable future for farming; and (2) freedom from chemicals, because chemicals are dangerous for the farmer and animals. Castellini et al. (2008) mentioned that the development of organic and free-range poultry production is in response to consumers' concerns for environmental protection, animal welfare and production systems that progressively enhance the institutional environment.

Hermansen (2001) found that different consumer groups emphasised different motives when purchasing organic meat. While elderly consumers may purchase organic meat to gain a more healthy meal, younger consumers emphasise the

importance of protecting the environment. O'Donovan and McCarthy (2002) found that consumers were more concerned about their health, rather than the environment or concerns about pollution when purchasing organic meat. McEachern and Schroder (2002) demonstrated similar results, reporting that consumers main motivation for buying organic food was concern about food safety, followed by concerns for animal welfare and finally the environment. According to McEachern and Schroder (2002) and Castellini et al. (2008), consumers' preferences for intangible quality attributes such as individual health and safety, animal welfare, production aesthetics, pollution, biodiversity and rural sustainability are influenced by their knowledge, attitudes and values towards these attributes. Yiridoe et al. (2005) suggested that consumers may place more emphasis on their personal benefits such as health and food safety, rather than any other social and community benefits in the purchase of organically produced food.

While consumers may demonstrate their desire to protect the environment and express their concerns for other ethical issues, they often face challenges in aligning their beliefs and their actions. According to McEachern and Schroder (2002), although some "green" consumers support organic, the environment and fair trade, because of the higher price they have to pay to purchase these products, they are often unwilling to do so. Ahmad and Juhdi (2008) confirmed that Malaysian consumers possess the knowledge and awareness of sustainability, but most consumers were unwilling to purchase environmentally produced meat. In Malaysia, concerns for animal welfare by low income earners are almost non existent (Azhari 2010).

The physical attributes of the meat (freshness and cleanliness) and Halal (appropriate slaughter and Halal certificate) were least often cited by respondents as having any positive impact on the environment or worker welfare. Given that the production method involved credence quality attributes, consumers may not be able to identify whether the product was produced using organic or conventional methods even after consumption or repeated purchase (Yiridoe et al. 2005).

Not unexpectedly, respondents strongly believed that variables such as Halal certification, appropriate slaughter and a quality assurance label were more often associated with food that was guaranteed Halal (Table 10.49).

Table 10.49: Group of variables respondents relate with Halal

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food is guaranteed Halal	Halal certificate, appropriately slaughtered Quality assurance label Country-of-origin, label/brand	Halal certificate, appropriately slaughtered Quality assurance label, country-of-origin Label/brand, grown on local farms

According to Grunert (2005), Halal is a credence quality attribute, which cannot be evaluated or ascertained by consumers, even after consuming the product. Thus it comes as no surprise to find that intrinsic cues such as freshness and skin colour, and extrinsic cues such as price were among the variables least often associated with the Halal status of the meat respondents intended to purchase.

Credence quality attributes must be clearly communicated to consumers through labelling (Bonne and Verbeke 2008b). Nevertheless, there have been a number of cases where a Halal logo attached to a piece of meat does not necessarily indicate that the product is Halal. *Berita Harian* reported that while cleaning a chicken, a family had some doubt as to the Halal status of the meat they had bought from a famous hypermarket in Penang which displayed a JAKIM Halal logo and claimed to be Halal (*Peniaga saman Tesco RM1.6 juta kerana jual ayam tidak Halal* 2010). Several investigations was made by the Penang Islamic Affairs Department which confirmed that the chicken was not slaughtered according to Islamic rulings and was not suitable for consumption by Muslim consumers. According to the Muslim Consumers Association of Malaysia (PPIM), the misuse of Halal certification and the Halal logo is not new as a result of poor monitoring by JAKIM (*Syarikat Ayam Dinding disaman RM101 juta, PPIM mahu Akta Halal digubal segera* n.d.). Nevertheless, the Trade Description Act 1970 is currently being amended where businesses may be fined between RM500,000 and up to RM1 million or five to ten years imprisonment if found guilty of abusing the Halal certification and logo issued by JAKIM (*Denda RM1 juta ulangi salah guna sijil, logo Halal* 2010).

Notwithstanding, consumers have expressed their doubts with regard to the Halal status of beef imported from foreign countries, given that these abattoirs are not inspected by JAKIM regularly (*Pastikan status Halal, khasiat daging kerbau India* 2010).

The appropriate slaughtering method according to Islamic rules was also associated with fresh/chilled meat that was guaranteed Halal. Pointing and Teinaz (2004) find that meat which has not been slaughtered according to Islamic requirements cannot be considered to be Halal. According to the Muslim Council of Britain (MCB), 90.0% of the meat and poultry in the UK which is claimed to be Halal was not slaughtered according to Muslim rulings (Ahmed 2008). A similar case was reported in Malaysia where JAKIM had to stop the operation of a chicken company because it was found not to be slaughtering the chickens accordingly; (1) some chickens were being slaughtered twice; (2) some chickens were found to be dead before slaughtering and (3) some veins of the chickens were still attached and not severed (*Syarikat Ayam Dinding disaman RM101 juta, PPIM mahu Akta Halal digubal segera* n.d.). Recently, JAKIM conducted an unexpected inspection of three slaughtering houses in Chow Kit market which distribute chickens to supermarkets and traditional markets around the Klang Valley (Md Denin 2010). Unfortunately, JAKIM found that the slaughtering methods were often inappropriate given that; (1) some veins were still attached; (2) blunt knives were used; and (3) the person in charge of slaughtering the chicken did not have a certificate from JAKIM.

The top three desired values were similarly ranked by respondents in their decision to purchase both meat products (Table 10.50).

Table 10.50: Importance of criteria respondents use in their decision to purchase fresh/chilled meat in a retail store

Fresh/chilled chicken	Fresh/chilled beef
The food is guaranteed Halal. The food is safe to eat. The food is healthy and nutritious.	The food is guaranteed Halal. The food is safe to eat. The food is healthy and nutritious. The food has a good taste. The food has good texture/mouth feel.

Respondents however considered two additional desired values (taste and good texture) in their decision to purchase fresh/chilled beef from a retail outlet. The findings correspond with Savell et al. (1989), who clearly indicated that beef is consumed because people like the taste of the meat. Umberger et al. (2000) confirmed that taste (flavour) was an important factor influencing consumers' decision to purchase fresh/chilled beef products. In comparisons between a variety of different meats (beef, chicken, pork, lamb and ostrich), the flavour of both beef and ostrich were rated highly (Kubberod et al. 2002). Goodson et al. (2002) segmented consumers according to their positive attitudes towards beef. The 'Beef Loyals' gave the highest score for the flavour of the meat when rating the taste of beef steaks compared to the 'Budget Rotators' (consumers whose meat preferences were driven by budget) and the 'Variety Rotators' (where consumers preferences for beef and chicken were equally positive). Kubberod et al. (2002) tried to segment the consumers according to the relation between the type of meat, taste and gender. Males had a stronger preference towards consuming beef because of the hedonic pleasure of eating red meat. Although male consumers were found to have placed more importance on the sensory attributes (taste and tenderness) compared to females, Verbeke (2001) confirmed that the scores were similar for beef and chicken in terms of the taste and quality of the meat.

The findings suggest that the taste of chicken was less important to respondents when purchasing fresh/chilled chicken as compared to the purchase of fresh/chilled beef. Yeung and Morris (2001) reported that many respondents believed that chicken meat was tasteless, flat and had little flavour compared to other meats. These respondents further explained that intensive farming methods, which require chickens to be sold prematurely, where among the reasons why chicken meat had less taste. Kennedy et al. (2004) also reported that chicken meat was perceived to be tasteless. Kubberod et al. (2002) reported that chicken had the lowest taste ratings compared to other meat products.

Good texture and mouth feel was also considered an important criteria which impacted on respondents' decision to purchase fresh/chilled beef. According to Savell et al. (1989), texture was further described as the tenderness and juiciness of the meat. Glitsch (2000) found that the texture of meat was an important attribute

which described the “eating quality” of beef. Goodson et al. (2002) indicated that consumers may experience different levels of tenderness and juiciness for beef, which was largely determined by the cooking method (either the meat is grilled, broiled, fried or braised). According to the 1995 National Beef Quality Audit (USDA/ERS 2002) [cited in Resurreccion 2003], one in four steaks was claimed to be “too tough to chew”. Savell et al. (1989) mentioned that taste, texture and leanness of beef have a unique association with the fat content. A consumer with a strong preference for lean meat will have difficulty in finding a piece of meat that has a good texture, is tender and juicy (Resurreccion 2003). As a result of dissatisfaction with the poor taste, tenderness and juiciness of the meat, Umberger et al. (2000) reported that 46.0% of consumers had stopped purchasing beef.

The analysis revealed that respondents were most often displeased when it came to ensuring that the fresh/chilled chicken and fresh/chilled beef was Halal, safe, healthy and nutritious to eat (Table 10.51).

Table 10.51: Occasions where respondents felt unhappy with the quality of fresh/chilled meat purchased with regard to the following desired outcomes

Fresh/chilled chicken	Fresh/chilled beef
The food is not guaranteed Halal.	The food is not guaranteed Halal.
The food is unsafe to eat.	The food is unsafe to eat.
The food is unhealthy and not nutritious.	The food is unhealthy and not nutritious.
The food does not represent value for money.	The food does not represent value for money.
The food has a poor texture/mouth feel.	The food has a poor texture/mouth feel.
The food has a bad taste.	The food has a bad taste.
The food has not been produced in a way that protects worker welfare.	The food has not been produced in a way that protects worker welfare.
The food has not been produced in a way that is good for the environment.	The food has not been produced in a way that is good for the environment.

These desired outcomes involved process-related qualities (credence qualities) which may be difficult to confirm even after consumption. Grunert (2005) described that after purchase, consumers may have been exposed to new information or forgotten the information gathered, which then questions the credibility of the information processed before the purchase. At this point in time, consumers may remove or change a previous quality perception that they had about the product.

Verbeke and Vackier (2004) segmented consumers as “concerned meat consumers” and “cautious meat lovers”. “Concerned meat consumers” placed extremely high importance on meat safety, strongly reduced their meat consumption and purchased less but better quality meat. “Cautious meat lovers” purchased meat on a strong foundation that it was healthy for their children. In Malaysia, beside the supermarkets and hypermarkets, fresh meat was accessible from the traditional markets. As described by Bakar and Vathsala (2005), fresh meat left on counters at room temperature may enhance the growth of salmonella and other food borne pathogens.

More than half of the respondents were reasonably satisfied with the quality of the fresh/chilled meat purchased from a retail store. This may also indicate that respondents are confident with the quality of the fresh/chilled meat available in Malaysia. Particularly in the case of chicken, Malaysian consumers should have confidence in the Halal status of the meat, given that the majority of the chicken is produced locally (*Penternak disaran eksport ayam elak lebihan pengeluaran* 2002). According to Che Man et al. (2007), due to its strict Halal certification procedures, Malaysia has established credibility and has thus gained consumers’ confidence in terms of providing food that is guaranteed Halal. Given that the Malaysian standard guidelines for Halal food are being implemented together with MS1480 and MS1514, which includes food safety and food hygiene, Zakaria (2008) believes that this will further enhance consumers’ level of confidence towards Halal and food safety. During the bird flu crisis which affected the poultry industry, the Department of Veterinary Services (DVS) assured consumers that chicken meat was safe to eat given that: (1) chicken was being supplied by local farmers; and (2) the government had banned chicken imports from Thailand (Ismail 2004). To further enhance food safety, Selamat (2007) mentioned that DVS had also introduced an accreditation programme known as the Veterinary Health Mark (VHM). Any food processing plant which involves meat and poultry that complies with the minimum standard of hygiene, sanitation, quality assurance and food safety systems shall be rewarded with the VHM logo. According to Selamat (2007), products carrying a VHM logo improve consumers’ confidence towards Malaysian meat products.

A cross-tabulation was performed to identify which group of respondents (according to the preferred place of purchase) were any more or less dissatisfied with the desired outcomes. The results found a greater variance between individuals, rather than between the place of purchase. In other words, respondents were either satisfied or dissatisfied with the quality of fresh/chilled meat they had purchased. Their satisfaction or dissatisfaction was more related to the product rather than the place of purchase.

The three main reasons consumers gave for being dissatisfied with their purchase of fresh/chilled meat were not fresh, having an unpleasant smell and high price. These were similar for both fresh/chilled chicken and fresh/chilled beef (Table 10.52).

Table 10.52: Reasons for dissatisfaction with the quality of fresh/chilled meat

Fresh/chilled chicken	Fresh/chilled beef
Not fresh	Not fresh
Smelly	Price
Price	Smelly, physical appearance: texture, contained a lot of fat, colour
Taste, physical appearance: colour, texture, cleanliness	Cleanliness, taste, not Halal guaranteed
Not Halal guaranteed	Origin is unknown, contained growth promotants

The reasons for respondents' dissatisfaction may coincide with the variables respondents used in their decision to purchase fresh/chilled meat. Poor taste was mentioned by respondents as an indicator of dissatisfaction with their purchase of fresh/chilled meat from a retail store. This finding concurs with Umberger et al. (2000), who demonstrated how taste and flavour were indicative of consumer satisfaction for fresh beef products. Moreover, respondents also mentioned that they were dissatisfied with the physical appearance of the meat. These findings concur with Becker (2000), who associated cues such as freshness, smell, colour, texture, tenderness, juiciness and flavour with consumers' experience quality attributes or eating quality. Becker (2000) added that some cues have a higher predictive value in determining the experience quality attributes. This may explain why variables such as freshness and smell are so important to the consumer. According to Lister (1996, p.194) [cited in McCarthy et al. 2003], meat is eaten to be enjoyed. Verbeke and Vackier (2004) and McEachern and Seaman (2005) suggest that consumers

who enjoy the pleasure of eating meat are well experienced in their purchase of meat and were not greatly concerned about issues that may reduce their “eating enjoyment”.

Consumers also expressed their dissatisfaction over the price of fresh/chilled meat that was available from retail markets. The price of fresh/chilled chicken was found to be more competitive compared to the price for fresh/chilled beef. However, consumers’ dissatisfaction over the increasing price of chicken has been more frequently reported in the newspaper, compared to their dissatisfaction over the price of beef (Amin and Razali 2010; Yatim et al. 2010; Zolkiply 2010). The findings may indicate that Malaysian consumers are more price conscious in their decision to purchase fresh/chilled meat. Menkhaus et al. (1993) [cited in Resurreccion 2003] indicated that consumers were concerned with regards to the cost of purchasing beef, where they claimed to be too expensive. Meat offered at a much lower price was found to be a critical factor for Italians and English (Concoran et al. 2001). In contrast, McCarthy et al. (2003) demonstrated that price was not an important issue for Irish consumers when thinking about beef. Irish consumers were more responsive towards health and safety and the taste of the meat.

11. A description of the respondents' purchase of fresh fruit and vegetables

11.1 Chapter Outline

Respondents' purchases of fresh fruit and vegetables are described in this chapter. The different purchasing patterns used by respondents will be discussed in three separate sections; Part One for the purchase of fresh potatoes, Part Two for the purchase of fresh spinach and Part Three for the purchase of fresh apples. The next section reports on how respondents handle dissatisfaction with the quality of the fresh fruit and vegetables they have purchased. Several issues regarding the respondents' experiences with food safety in the fresh produce industry will then be presented. The final section concludes by comparing respondents shopping behaviour according to their purchase of fresh fruit and vegetables from a retail store.

11.2 Part One: The purchase of fresh potatoes

Some 30.7% of respondents purchased fresh potatoes one time every two weeks, followed by one time per month (28.9%) and one time per week (24.1%) (Table 11.1).

Table 11.1: Frequency of purchasing fresh potatoes

	N	%
Everyday	0	0.0
2 – 3 times per week	8	3.5
Once a week	55	24.1
Once every two weeks	70	30.7
Once a month	66	28.9
Others	29	12.7
	228	100.0

Only a few respondents purchased fresh potatoes two to three times in a week (3.5%).

More than one half of the respondents (58.2%) cited freshness as the most important criteria they considered in their decision to purchase fresh potatoes (Table 11.2).

Table 11.2: Variables respondents consider in their decision to purchase fresh potatoes

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	73	39	11	6	2	131	58.2
Size	27	23	19	17	6	92	40.9
Price	22	25	19	12	11	89	39.6
Cleanliness	19	25	16	14	3	77	34.2
Texture	25	18	9	11	5	68	30.2
Skin colour	13	23	22	3	3	64	28.4
Quality	18	8	1	3		30	13.3
No smell	4	12	9	4		29	12.9
Easy to peel	3	3	6	4	5	21	9.3
Appearance	6	7	3		3	19	8.4
Origin	2	1	4	6	6	19	8.4
No sprouting	1	5	7	4	2	19	8.4
Type of potato/brand	2	3	7	4	1	17	7.6
No holes	1	5	4			10	4.4
Freedom from chemicals		2	4	2	2	10	4.4
Intended use	3	3		2	1	9	4.0
I can self select	3		4		1	8	3.6
Weight of the potato	1	1	3		1	6	2.7
Nicely packed	1		1		2	4	1.8
Taste		1	1	1		3	1.3
Promotion		1			1	2	0.9
The place of purchase	1			1		2	0.9
Location – near my house/ office		1				1	0.4
Halal				1		1	0.4
Parking				1		1	0.4
Organic				1		1	0.4
	225						

Other variables utilised by respondents in their decision to purchase fresh potatoes were size (40.9%), price (39.6%), cleanliness (34.2%), texture (30.2%) and skin colour (28.4%).

The quality (13.3%) and no smell (12.9%) were also considered by respondents in their decision to purchase fresh potatoes. Another group of variables respondents considered in their decision to purchase fresh potatoes were shape (easy to peel) (9.3%), appearance (8.4%), origin of the potatoes (8.4%), the absence of sprouts (8.4%), and the type or variety of potato (7.6%).

The physical appearance of the potatoes (freshness, firmness, freedom from pests and diseases, the absence of sprouts, skin colour and tuber size), food safety concerns (potatoes grown without chemical residues) and value (value for money, intended use and competitive price) were the most important variables influencing the respondents' decision to purchase fresh potatoes (Table 11.3).

Table 11.3: Importance of variables influencing respondents' decision to purchase fresh potatoes

	Mean	**SD**
Freshness	5.61[a]	0.77
Firmness	5.45[a]	0.77
Freedom from chemical residues	5.44[a]	0.93
Freedom from pests and diseases	5.44[a]	0.88
Value for money	5.23[a]	0.96
Freedom from sprouting	5.15[a]	1.05
Skin colour	5.13[a]	0.91
Intended use	5.09[a]	0.98
Competitive price	5.09[a]	1.03
Tuber size	5.07[a]	1.05
Washed	4.94[b]	1.11
Flesh colour	4.93[b]	1.05
Tuber shape	4.85[b]	1.22
Free from soil	4.84[b]	1.09
Variety	4.62[c]	1.15
Locally grown	4.28[d]	1.39
Country-of-origin	4.24[e]	1.31
Organic	4.24[e]	1.42
Depth of eyes	4.24[e]	1.34
Place of purchase	4.18[f]	1.43
Favourable prior purchase	4.11[g]	1.32
Availability of product information in-store	4.02[g]	1.36
Label or brand	3.95[g]	1.36
Advice from sales assistants	3.38[h]	1.43
Potatoes is prepacked	3.36[h]	1.40
Newspaper advertising/catalogues	3.21[i]	1.39

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

It appeared that the promotion of fresh potatoes through newspapers and catalogues was the least important variable respondents considered in purchasing fresh potatoes.

Principal component analysis, with varimax rotation and Kaiser normalization, revealed five factors that collectively explained 67.6% of the variance (Table 11.4).

Table 11.4: Factors influencing respondents' decision to purchase fresh potatoes

	Factor				
	1	**2**	**3**	**4**	**5**
Newspaper advertising/ catalogues	0.831				
Advice from sales assistant	0.830				
Potatoes is prepacked	0.822				
Availability of product information in-store	0.749				
Label or brand	0.680				
Organic		0.796			
Favourable prior purchase		0.697			
Country-of-origin		0.695			
Locally grown		0.656			
Variety		0.511			
Tuber shape			0.712		
Freedom from sprouting			0.708		
Tuber size			0.685		
Flesh colour			0.685		
Competitive price				0.805	
Value for money				0.752	
Intended use				0.734	
Washed					0.815
Skin colour					0.763
Free from soil					0.710
Eigenvalue	7.517	2.485	1.301	1.162	1.045
Percent variance	18.22	14.67	12.82	11.27	10.58
Cumulative variance	18.22	32.89	45.71	56.98	67.55
Cronbach's alpha	0.892	0.837	0.789	0.785	0.763
Factor mean	3.59^{c}	4.30^{b}	5.00^{a}	5.14^{a}	4.97^{a}

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 7.51, included five variables that accounted for 18.2% of the variance. This factor was labelled as "promotions" as it included variables such as advertising in newspaper or catalogues, advice from sales assistants, packaging, product information in-store and labeling. Although the Cronbach's alpha for this factor was 0.89, indicative of a high reliability, respondents considered this construct to be the least important in their decision to purchase fresh potatoes.

Factor Two, with an Eigenvalue of 2.49, had five variables that accounted for 14.7% of the variance. This construct, which was labelled as “prior experience”, contained a diverse range of variables that were found to influence respondents’ decision to purchase fresh potatoes such as organic, favourable prior purchase, where the potatoes were grown and variety. The Cronbach’s alpha for this construct was 0.84, but again, it was of only some importance in the respondents’ decision to purchase fresh potatoes.

Factor Three, had an Eigenvalue of 1.30 and explained 12.8% of the variance. With a Cronbach’s alpha of 0.79, not only was the variable considered reliable, but it was considered to be among the most important factors influencing respondents’ decision to purchase fresh potatoes. The variables which loaded onto this factor included tuber size, tuber shape, freedom from sprouting and flesh colour and was labelled as “physical appearance”.

Factor Four, with an Eigenvalue of 1.16, was comprised of three variables (competitive price, value for money and intended use) and was labelled as “value”. This factor accounted for 11.3% of the variance and had a Cronbach’s alpha of 0.79. This construct was also considered to be one of the most important in the respondents’ decision to purchase fresh potatoes from a retail store.

Factor Five, which was labelled as “usage”, included three variables that facilitated the use of potatoes in the home (washed, skin colour and freedom from soil). This final factor accounted for 10.6% of the variance. Not only was this factor considered reliable (Cronbach’s alpha of 0.76), but it too was one of the most important in the respondents’ decision to purchase fresh potatoes.

Respondents were then asked to relate those variables that they used in their decision to purchase fresh potatoes to eight desired outcomes.

Most respondents (63.3%) ranked freshness as that variable that was most often associated with good taste (Table 11.5).

Table 11.5: The association between criteria utilised in the decision to purchase fresh potatoes with a good taste

Desired outcome 1: The food has a good taste	Ranking			N	%
	1	2	3		
Freshness	90	30	11	131	63.3
Firmness	26	30	25	81	39.1
Flesh colour	23	31	12	66	31.9
Skin colour	34	12	9	55	26.6
Country-of-origin	7	7	7	21	10.1
Tuber size	5	6	8	19	9.2
Freedom from sprouting	1	11	6	18	8.7
Freedom from chemical residues	3	5	9	17	8.2
Freedom from pests and diseases		9	8	17	8.2
Washed	3	9	3	15	7.2
Variety	7	3	2	12	5.8
Organic	3	4	4	11	5.3
Tuber shape		2	5	7	3.4
Depth of eyes			7	7	3.4
Free from soil	1	2	3	6	2.9
Intended use	1	1	2	4	1.9
Competitive price		1	1	2	0.9
Value for money	1			1	0.5
Favourable prior purchase	1			1	0.5
Quality	1			1	0.5
Label or brand		1		1	0.5
	207				

Other variables that were indicative of good taste were firmness (39.1%), flesh colour (31.9%) and skin colour (26.6%).

Good taste was seldom associated with price (0.9%) or value (0.5%) as these variables were seldom cited.

In identifying that the potatoes were considered safe to eat, almost 70.0% of the respondents indicated the importance of potatoes being free from chemical residues and free from any pests and diseases (54.9%) (Table 11.6).

Table 11.6: The association between criteria utilised in the decision to purchase fresh potatoes which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Freedom from chemical residues	72	52	20	144	69.9
Freedom from pests and diseases	57	30	26	113	54.9
Free from soil	7	10	17	34	16.5
Freshness	10	10	9	29	14.1
Washed	18	7	4	29	14.1
Organic	17		11	28	13.6
Freedom from sprouting	4	10	5	19	9.2
Skin colour	10	5	3	18	8.7
Organic		18		18	8.7
Flesh colour	3	9	3	15	7.3
Country-of-origin	2	3	7	12	5.8
Firmness	1	1	2	4	1.9
Label or brand	1	2	1	4	1.9
Locally grown	1	2		3	1.5
Availability of product information in-store		1	2	3	1.5
Depth of eyes	1			1	0.5
Intended use	1			1	0.5
Competitive price			1	1	0.5
Favourable prior purchase	1			1	0.5
Advice from sales assistants		1		1	0.5
Place of purchase			1	1	0.5
	206				

Respondents also considered variables such as freedom from soil (16.5%), washed (14.1%), fresh (14.1%) and organic potatoes (13.6%) as being associated with food that was considered safe to eat.

Intended use (0.5%), competitive price (0.5%), favourable prior purchase (0.5%), advice from sales assistants (0.5%) and place of purchase (0.5%) were among the least cited variables associated with food safety.

In determining that the potatoes were healthy and nutritious, freshness (41.0%) and freedom from chemical residues (41.0%) were the most frequently cited variables in the respondents' decision to purchase fresh potatoes (Table 11.7).

Table 11.7: The association between criteria utilised in the decision to purchase fresh potatoes with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	49	24	9	82	41.0
Freedom from chemical residues	25	30	27	82	41.0
Freedom from pests and diseases	23	24	13	60	30.0
Organic	25	9	24	58	29.0
Firmness	15	12	13	40	20.0
Skin colour	24	6	4	34	17.0
Flesh colour	8	16	5	29	14.5
Free from soil	4	9	2	15	7.5
Washed	10	3	3	16	8.0
Freedom from sprouting	1	5	3	9	4.5
Label or brand	3	2		5	2.5
Variety	2		2	4	2.0
Tuber shape		1	3	4	2.0
Intended use	2		1	3	1.5
Potatoes is prepacked	1	2		3	1.5
Place of purchase	1	2		3	1.5
Locally grown	1	2		3	1.5
Favourable prior purchase	3			3	1.5
Country-of-origin	1	1		2	1.0
Depth of eyes	1		1	2	1.0
Tuber size		1		1	0.5
Availability of product information in-store			1	1	0.5
Quality	1			1	0.5
	200				

Other variables that were most often associated with health and nutrition were freedom from pests and diseases (30.0%), organic (29.0%), firmness (20.0%), skin colour (17.0%) and flesh colour (14.5%).

Place of purchase (1.5%) and country-of-origin (1.0%) were among the variables least frequently cited by respondents as leading to food that was perceived to be healthy and nutritious.

Competitive price (38.1%), value for money (27.9%) and freshness (25.4%) were the variables most often associated with value for money (Table 11.8).

Table 11.8: The association between criteria utilised in the decision to purchase fresh potatoes that represented good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	47	18	10	75	38.1
Value for money	33	13	9	55	27.9
Freshness	35	12	3	50	25.4
Tuber size	13	11	5	29	14.7
Intended use	11	4	9	24	12.2
Label or brand	6	13	5	24	12.2
Firmness	5	10	4	19	9.6
Country-of-origin	5	7	6	18	9.1
Organic	5	3	8	16	8.1
Place of purchase	6	7	2	15	7.6
Locally grown	8	1	3	12	6.1
Potatoes is prepacked	1	7	1	9	4.6
Variety	2	3	4	9	4.6
Freedom from pests and disease	2	3	4	9	4.6
Tuber shape	3	4	2	9	4.6
Freedom from chemical residues		5	2	7	3.6
Favourable prior purchase	2	1	4	7	3.6
Flesh colour	2	2	2	6	3.0
Skin colour	3	1	1	5	2.5
Newspaper advertising/catalogues	2	1	2	5	2.5
Advice from sales assistants	2	1	1	4	2.0
Washed	1	1	1	3	1.5
Freedom from sprouting	1	1	1	3	1.5
Availability of product information in-store	1			1	0.5
Quality	1			1	0.5
	197				

Tuber size (14.7%), the intended use (12.2%) and the label or brand (12.2%) were also considered indicative of value for money.

With regard to fresh potatoes that were perceived to represent good value for money, respondents were less likely to consider freedom from pests and diseases (4.6%), freedom from chemical residues (3.6%), flesh colour (3.0%) and skin colour (2.5%), and promotional items such as advertising in newspaper or catalogues (2.5%) and advice from sales assistants (2.0%).

Firmness (49.7%) and freshness (48.7%) were most often cited by respondents as being associated with good texture and mouth feel (Table 11.9).

Table 11.9: The association between criteria utilised in the decision to purchase fresh potatoes with good texture/mouth feel

Desired outcome 5: The food has good texture/mouth feel	Ranking			N	%
	1	2	3		
Firmness	42	37	20	99	49.7
Freshness	57	25	15	97	48.7
Flesh colour	32	26	10	68	34.2
Skin colour	24	12	13	49	24.6
Tuber shape	6	4	11	21	10.6
Tuber size	6	12	2	20	10.1
Freedom from sprouting	4	7	6	17	8.5
Freedom from chemical residues	1	8	6	15	7.5
Washed	2	8	2	12	6.0
Freedom from pests and diseases	6	3	3	12	6.0
Country-of-origin	4	2	6	12	6.0
Organic	5	2	4	11	5.5
Variety	3	3	2	8	4.0
Depth of eyes	1	1	5	7	3.5
Locally grown	2		1	3	1.5
Intended use	1	1	1	3	1.5
Free from soil	1	1	1	3	1.5
Competitive price	1			1	0.5
Value for money		1		1	0.5
Label or brand		1		1	0.5
Advice from sales assistants		1		1	0.5
Place of purchase			1	1	0.5
Quality	1			1	0.5
	199				

Other variables which described the physical appearance of the tubers like flesh colour (34.2%) and skin colour (24.6%), were also considered indicative of the texture or mouth feel.

Variables such as competitive price (0.5%), value for money (0.5%) and promotional variables such as label/brand (0.5%), and advice from sales assistants (0.5%) were among the variables least often cited by respondents as indicating that the fresh potatoes purchased had a good texture or mouth feel.

Most respondents (69.8%) cited organic as being that variable which was most often associated with the production of potatoes in a manner that was conducive for the environment (Table 11.10).

Table 11.10: The association between criteria utilised in the decision to purchase fresh potatoes that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	**Ranking**			**N**	**%**
	1	**2**	**3**		
Organic	103	26	12	141	69.8
Freedom from chemical residues	44	38	11	93	46.0
Freedom from pests and diseases	14	15	16	45	22.3
Locally grown	11	19	9	39	19.3
Freshness	5	6	3	14	6.9
Free from soil	2	3	5	10	4.9
Label or brand	3	2	3	8	3.9
Country-of-origin	2	2	3	7	3.5
Flesh colour	4		2	6	2.9
Freedom from sprouting	1	2	2	5	2.5
Firmness	2	1	2	5	2.5
Availability of product information in-store	3	1	1	5	2.5
Newspaper advertising/catalogues	2	3		5	2.5
Tuber size		3	1	4	1.9
Advice from sales assistants		3	1	4	1.9
Variety	1		2	3	1.5
Skin colour		1	1	2	0.9
Tuber shape			2	2	0.9
Value for money	1		1	2	0.9
Potatoes is prepacked		1	1	2	0.9
Place of purchase	1		1	2	0.9
Washed	1			1	0.5
Competitive price	1			1	0.5
Intended use	1	1		2	0.5
Depth of eyes			1	1	0.5
Favourable prior purchase		1		1	0.5
	202				

Other variables that were related to this desired outcome were freedom from chemical residues (46.0%), freedom from pests and diseases (22.3%) and locally grown (19.3%). Promotional variables such as the label (3.9%), product information in-store (2.5%), advertising in newspapers or catalogues (2.5%) and advice from sales assistant (1.9%)

were rarely cited by respondents in purchasing potatoes that had been produced in a manner that was good for the environment.

Potatoes that were free from chemical residues (44.8%) was the most frequently cited variable respondents used in their decision to purchase fresh potatoes that had been produced in a way that protected worker welfare (Table 11.11).

Table 11.11: The association between criteria utilised in the decision to purchase fresh potatoes that protects worker welfare

Desired outcome 7: The food is has been produced in a way that protects worker welfare	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freedom from chemical residues	44	29	9	82	44.8
Organic	33	13	8	54	29.5
Locally grown	33	11	9	53	28.9
Freedom from pests and diseases	17	6	4	27	14.8
Country-of-origin	13	2	3	18	9.8
Availability of product information in-store	7	4	3	14	7.7
Advice from sales assistants	4	9	1	14	7.7
Place of purchase	4	5	2	11	6.0
Competitive price	5	5		10	5.5
Newspaper advertising/catalogues	5	2	3	10	5.5
Free from soil	1	4	3	8	4.4
Value for money	2	3	3	8	4.4
Label or brand	2	3	3	8	4.4
Potatoes is prepacked	4	1	2	7	3.8
Intended use	2	3	1	6	3.3
Variety	2	2	2	6	3.3
Washed	2	3		5	2.7
Favourable prior purchase	2		2	4	2.2
Freedom from sprouting		1	2	3	1.6
Freshness		1	1	2	1.1
Firmness	1			1	0.5
	183				

Organic (29.5%) and locally grown (28.9%) were the other most frequently cited variables in selecting potatoes that had been produced in a way that was not harmful for workers.

Competitive price (5.5%) and value for money (4.4%) were less often associated with worker welfare.

To ensure that the food was Halal, potatoes that had been grown locally (36.4%), the label or brand (36.4%) and the country-of-origin (33.7%) were the most frequently cited variables (Table 11.12).

Table 11.12: The association between criteria utilised in the decision to purchase fresh potatoes that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	**Ranking**			**N**	**%**
	1	**2**	**3**		
Locally grown	43	17	7	67	36.4
Label or brand	35	24	8	67	36.4
Country-of-origin	35	17	10	62	33.7
Place of purchase	17	8	8	33	17.9
Availability of product information in-store	7	13	12	32	17.4
Organic	15	5	10	30	16.3
Freedom from chemical residues	6	7	6	19	10.3
Advice from sales assistants	6	5	7	18	9.9
Freshness	6	2	1	9	4.9
Newspaper advertising/catalogues	3	6		9	4.9
Favourable prior purchase	4	1		5	2.7
Washed	2	1	1	4	2.2
Freedom from pests and diseases	1	2	1	4	2.2
Intended use	1	1		2	1.1
Free from soil	2			2	1.1
Variety			2	2	1.1
Flesh colour	1			1	0.5
Tuber shape		1		1	0.5
Potatoes is prepacked			1	1	0.5
	184				

The place of purchase (17.9%), the availability of product information in-store (17.4%) and organic (16.3%) were also among the most frequently cited variables respondents used to guarantee that the potatoes were Halal.

Variables indicating the physical appearance of the potatoes such as freedom from pests and diseases (2.2%), freedom from soil (1.1%), flesh colour (0.5%) and tuber shape (0.5%) were infrequently cited by respondents as being associated with Halal.

The importance of the desired values were then ranked by respondents. Respondents preferred to purchase fresh potatoes that were safe to eat, healthy and nutritious, guaranteed Halal, with a good taste and good texture or mouth feel (Table 11.13).

Table 11.13: Importance of criteria respondents use in their decision to purchase fresh potatoes in a retail store

	Mean	SD
The food is safe to eat	5.62[a]	0.71
The food is healthy and nutritious	5.55[a]	0.71
The food is guaranteed Halal	5.45[a]	1.11
The food has a good taste	5.37[a]	0.85
The food had good texture/mouth feel	5.33[a]	0.79
The food represents value for money	5.06[b]	0.94
The food has been produced in a way that is good for the environment	5.01[c]	1.00
The food has been produced in a way that protects worker welfare	4.68[d]	1.21

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Value for money was of secondary importance, with consumers concerns about sustainability being even further down the list. When purchasing fresh potatoes, the least important variable was worker welfare.

Some 28.3% of respondents were found to be often dissatisfied with the Halal status of the potatoes purchased, while another 25.3% of respondents always expressed concerns about the safety of the potatoes purchased (Table 11.14).

Some 21.9% of respondents often felt dissatisfied with the health and nutrition of the potatoes purchased, the value proposition (20.9%) or the texture/mouth feel (18.3%). Some 14.2% of respondents were always displeased with the taste of potatoes or dissatisfied with the way in which the potatoes had been produced so as to minimise the impact on the environment (13.4%) or the workers' welfare (11.4%).

Table 11.14: Occasions where respondents felt unhappy with the quality of fresh potatoes purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 219	53.4	3.2	4.6	0.9	5.9	3.7	28.3	1.0	1.0
The food is safe to eat. N = 225	44.0	9.8	7.1	4.9	3.6	5.3	25.3	1.0	2.0
The food is healthy and nutritious. N = 224	41.5	11.6	5.4	6.7	4.9	8.0	21.9	1.0	2.0
The food represents value for money. N = 225	31.6	17.8	9.3	3.6	8.4	8.4	20.9	1.0	3.0
The food has good texture/mouth feel. N = 219	29.7	16.0	13.7	1.8	9.6	11.0	18.3	1.0	3.0
The food has a good taste. N = 226	26.1	23.0	13.3	4.4	9.7	9.3	14.2	1.0	3.0
The food has been produced in a way that is good for the environment. N = 216	37.0	11.6	11.6	5.6	8.8	12.0	13.4	1.0	3.0
The food has been produced in a way that protects worker welfare. N = 219	43.8	11.9	9.1	5.0	8.7	10.1	11.4	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

Despite the dissatisfaction, more than half of the respondents had never had (or at worst one time in ten) purchased potatoes that were not Halal (56.6%), failed to protect worker welfare (55.7%) or were unhealthy (53.1%). Similarly, almost half of the respondents had never had (or at worst one time in ten) purchased potatoes that were unsafe to eat (49.8%), did not represent good value for money (49.4%), had a poor taste

(49.1%) or failed to protect the environment (48.6%). At the same time, some 45.7% of respondents had never been (or at worst one time in ten) disappointed with the texture/mouth feel of the potatoes they had purchased.

Where respondents were dissatisfied with the quality of the fresh potatoes they had purchased, the most frequently cited reasons for their dissatisfaction were rotten tubers (53.2%) and tubers that were not fresh (51.1%) (Table 11.15).

Table 11.15: Reasons for dissatisfaction with the quality of fresh potatoes

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Rotten	44	26	14	9	6	99	53.2
Not fresh	42	33	14	3	3	95	51.1
Too soft	21	22	9	3	1	56	30.1
Sprouting	10	8	7	8	3	36	19.4
Taste	17	8	3	2	4	34	18.3
Price	14	4	8	3	5	34	18.3
Dirty	5	8	11	3		27	14.5
Size/shape	13	6	1	4	2	26	13.9
Skin colour	5	8	8	3		24	12.9
Not organic	2	9	5		1	17	9.1
Prepacked	7	1	1	1		10	5.4
No information regarding the product	2	1	2	3	1	9	4.8
Ripeness	3	1				4	2.2
Not nicely packed		2		1		3	1.6
Difficult to peel		1				1	0.5
My fault – I did not give close attention when selecting	1					1	0.5
	186						

Other reasons given by respondents to describe their dissatisfaction included the tubers being too soft (30.1%), sprouting (19.4%), poor taste (18.3%) and the high cost (18.3%). Dirty tubers (14.5%), poor size and shape (13.9%) and skin colour (12.9%) also proved problematic.

11.3 Part Two: The purchase of fresh spinach

Fresh spinach was most frequently purchased at least one time per week (44.1%) (Table 11.16).

Table 11.16: Frequency of purchasing fresh spinach

	N	%
Everyday	0	0.0
2 – 3 times per week	15	7.8
Once a week	70	36.3
Once every two weeks	54	28.0
Once a month	30	15.5
Others	24	12.4
	193	100.0

When thinking about spinach, most respondents (92.6%) considered freshness in their decision to purchase fresh spinach (Table 11.17).

Respondents preferred to purchase spinach that was clean (37.4%) and not too expensive (36.8%). Good colour (27.4%), good leaves (21.6%), freedom from chemical residues (18.9%) and free from pests (17.4%) were frequently cited.

Other variables that were less often considered by respondents in their decision to purchase fresh spinach included the label/brand (1.6%), the location of the retail outlet (1.1%) and taste (0.5%).

Table 11.17: Variables respondents consider in their decision to purchase fresh spinach

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	134	23	14	4	1	176	92.6
Cleanliness	10	27	13	13	8	71	37.4
Price	9	23	16	13	9	70	36.8
Colour	18	23	6	3	2	52	27.4
Leaves	5	17	11	6	2	41	21.6
Freedom from chemicals	3	11	16	5	1	36	18.9
Freedom from pests		13	10	6	4	33	17.4
Quality	4	8	7	1		20	10.5
Size	1	8	4	2	4	19	10.0
Organic	1	3	1	9	4	18	9.5
Origin	1	1	6	2		10	5.3
Firmness of the stem			7	3		10	5.3
Nicely packed	1		1	2	3	7	3.7
Have been eaten by pests		3	1		1	5	2.6
The type of spinach	1	1		2		4	2.1
I can self select	2			1	1	4	2.1
Nutrients		1	2			3	1.6
Label/brand		1		1	1	3	1.6
Location				2		2	1.1
Taste		1				1	0.5
	190						

The most important variables which influenced the respondents' decision to purchase fresh spinach revolved around the physical appearance of the product (freshness, no wilting, good coloured leaves that were free from pests and diseases, blemishes and bruising, and firmness), freedom from chemical residues, and good value for money (Table 11.18).

Table 11.18: Importance of variables influencing respondents' decision to purchase fresh spinach

	Mean	SD
Freshness	5.76[a]	0.54
Free from wilting	5.67[a]	0.62
Leaves	5.62[a]	0.71
Freedom of pests and diseases	5.57[a]	0.77
Colour	5.54[a]	0.79
Freedom from chemical residues	5.49[a]	0.86
Freedom from blemish and bruise	5.44[a]	0.82
Firmness of the stem	5.29[a]	0.91
Value for money	5.26[a]	0.98
Free from soil	5.02[b]	0.97
Locally grown	4.88[c]	1.22
Variety	4.82[d]	1.21
Organic	4.81[d]	1.09
Size	4.72[d]	1.18
Favourable prior purchase	4.56[e]	1.27
Spinach is sold loose	4.53[e]	1.25
Spinach is tied in bunches	4.44[f]	1.33
Stem removed	3.99[g]	1.48
Spinach is prepacked	3.92[h]	1.33

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Principal component analysis revealed three factors which collectively explained 71.3% of the variance (Table 11.19).

Factor One, with an Eigenvalue of 3.50, was comprised of four variables (organic, size, favourable prior purchase and locally grown). This factor was labelled as "safe". It accounted for 26.2% of the variance and with a Cronbach's alpha of 0.78 was considered highly reliable. Respondents ranked this construct as the second most important construct in their decision to purchase fresh spinach from a retail store.

Factor Two, with an Eigenvalue of 1.81, had three variables (free from wilting, freshness and leaves) which accounted for 26.1% of the variance. This factor was labelled as "quality". The Cronbach's alpha for this factor was 0.84, indicative of a high reliability. Not unexpectedly, this factor was the most important in the respondents' decision to purchase fresh spinach.

Table 11.19: Factors influencing respondents' decision to purchase fresh spinach

	Factor		
	1	**2**	**3**
Organic	0.750		
Size	0.746		
Favourable prior purchase	0.741		
Locally grown	0.734		
Free from wilting		0.878	
Freshness		0.867	
Leaves		0.836	
Spinach is tied in bunches			0.895
Spinach is prepacked			0.880
Eigenvalue	3.500	1.806	1.107
Percent variance	26.23	26.05	18.99
Cumulative variance	26.23	52.28	71.26
Cronbach's alpha	0.779	0.838	0.821
Factor mean	4.76^{b}	5.68^{a}	4.19^{c}

where those items with the same superscript are not significantly different at p = 0.05

Factor Three, with an Eigenvalue of 1.11 captured two variables which explained 18.9% of the variance. This construct had a Cronbach's alpha of 0.82. The variables which loaded into this construct indicated that the spinach was either prepacked or tied into bunches. Therefore, the construct was labelled as "convenience". Not only did bunching make it easier for the respondents to purchase fresh spinach, but also limited the amount of damage to the leaves.

Respondents were then asked which variables they most often used to achieve eight desired outcomes.

More than one half of the respondents (59.9%) indicated that freshness was an important indicator of good taste (Table 11.20).

Other variables which were considered indicative of good taste were colour (41.2%), leaves (36.7%), freedom from wilting (21.5%), firmness of the stem (19.2%), and freedom from any blemishes or bruises (14.7%). Organic (10.7%) and freedom from chemical residues (8.5%) were also associated with good taste.

Table 11.20: The association between criteria utilised in the decision to purchase fresh spinach with a good taste

Desired outcome 1: The food has a good taste	Ranking			N	%
	1	2	3		
Freshness	56	22	28	106	59.9
Colour	62	8	3	73	41.2
Leaves	12	44	9	65	36.7
Free from wilting	6	13	19	38	21.5
Firmness of the stem	8	16	10	34	19.2
Freedom from blemish and bruise	5	12	9	26	14.7
Organic	9	6	4	19	10.7
Freedom from chemical residues	8	3	4	15	8.5
Locally grown	2	1	5	8	4.5
Variety	5	1		6	3.4
Freedom from pests and diseases	1	3	2	6	3.4
Size		2	3	5	2.8
Free from soil	1	2		3	1.7
Value for money	1		1	2	1.1
Stem removed			1	1	0.6
Quality	1			1	0.6
Intended use		1		1	0.6
	177				

Value for money (1.1%), stem removed (0.6%), quality (0.6%) and intended use (0.6%) were among the least cited variables associated with the taste of spinach.

In determining whether the spinach was safe to eat, some 62.9% of respondents cited freedom from chemical residues (Table 11.21).

Two other variables which were also frequently cited by respondents in determining whether the spinach was safe to eat were freedom from pests and diseases (49.4%) and organic (31.5%). Other variables which were indicative of food safety included freedom from any blemishes and bruises (17.4%), no soil attached (16.9%), freshness (13.5%) and good colour (10.1%).

Value for money (0.6%) and label/brand (0.6%) were poor indicators of food safety.

Table 11.21: The association between criteria utilised in the decision to purchase fresh spinach which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Freedom from chemical residues	57	34	21	112	62.9
Freedom from pests and diseases	35	31	22	88	49.4
Organic	25	17	14	56	31.5
Freedom from blemish and bruise	14	7	10	31	17.4
Free from soil	14	11	5	30	16.9
Freshness	12	5	7	24	13.5
Colour	9	7	2	18	10.1
Free from wilting	5	5	3	13	7.3
Locally grown	3	4	3	10	5.6
Leaves	1	4	3	8	4.5
Firmness of the stem	2		1	3	1.7
Stem removed	1	1		2	1.1
Value for money			1	1	0.6
Label/brand		1		1	0.6
	178				

In order to consume healthy and nutritious food, freshness (42.6%) was the variable most frequently cited by respondents in their decision to purchase fresh spinach (Table 11.22).

Organic (32.4%), good colour (27.8%) and freedom from chemical residues (27.3%) were other variables most often cited by respondents in purchasing spinach that they perceived was healthy and nutritious.

Size (0.6%), stem removed (0.6%), variety (0.6%) and label/brand (0.6%) were among the variables less often associated with healthy and nutritious spinach.

Table 11.22: The association between criteria utilised in the decision to purchase fresh spinach with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	30	21	24	75	42.6
Organic	32	17	8	57	32.4
Colour	32	8	9	49	27.8
Freedom from chemical residues	21	17	10	48	27.3
Leaves	4	30	4	38	21.6
Free from wilting	15	6	14	35	19.9
Freedom from pests and diseases	14	9	11	34	19.3
Freedom from blemish and bruise	16	7	8	31	17.6
Firmness of the stem	3	8	13	24	13.6
Free from soil	1	5	3	9	5.1
Locally grown	1	5		6	3.4
Quality	4			4	2.3
Size	1			1	0.6
Stem removed	1			1	0.6
Variety	1			1	0.6
Label/ brand		1		1	0.6
	176				

Value for money (35.1%) and freshness (29.2%) were the two variables most often cited in purchasing spinach that delivered good value for money (Table 11.23).

While some respondents (19.6%) indicated that loose spinach represented better value, a similar number of respondents (15.5%) suggested that spinach tied in bunches was better value. For other respondents, the variety (18.5%), organic (10.8%) and size (10.1%) were indicative of value for money.

Freedom from blemishes and bruises (3.6%), freedom from soil (3.6%) and freedom from pests and diseases (2.4%) were among the variables less often mentioned by respondents in purchasing spinach that was perceived to represent good value for money.

Table 11.23: The association between criteria utilised in the decision to purchase fresh spinach that represented value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Value for money	45	10	4	59	35.1
Freshness	31	5	13	49	29.2
Spinach is sold loose	14	13	6	33	19.6
Variety	11	16	4	31	18.5
Spinach is tied in bunches	14	5	7	26	15.5
Organic	6	7	5	18	10.8
Size	12	3	2	17	10.1
Locally grown	5	9	2	16	9.5
Free from wilting	4	4	7	15	8.9
Firmness of the stem	3	8	3	14	8.3
Freedom from chemical residues	1	3	7	11	6.5
Spinach is prepacked	2	3	4	9	5.4
Colour	7	1		8	4.8
Leaves	2	4		6	3.6
Freedom from blemish and bruise	2	3	1	6	3.6
Free from soil	4	2		6	3.6
Favourable prior purchase	3	2		5	2.9
Freedom from pests and diseases		1	3	4	2.4
Quality	2	1		3	1.8
Stem removed			1	1	0.6
	168				

More than one half of the respondents (52.7%) believed that freshness was indicative of a good texture or mouth feel (Table 11.24).

Other variables most frequently cited included the firmness of the stem (35.5%), colour (31.9%), free from wilting (29.6%), good leaves (27.2%) and freedom from any blemishes or bruises (19.5%). For some 14.2% of respondents, organic was also a good indicator of good texture and mouth feel.

Favourable prior purchase (0.6%), locally grown (0.6%), prepacked (0.6%) and quality (0.6%) were variables perceived to have little impact on good texture and mouth feel.

Table 11.24: The association between criteria utilised in the decision to purchase fresh spinach with good texture/mouth feel

Desired outcome 5: The food had good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	54	17	18	89	52.7
Firmness of the stem	20	26	14	60	35.5
Colour	36	13	5	54	31.9
Free from wilting	14	24	12	50	29.6
Leaves	14	25	7	46	27.2
Freedom from blemish and bruise	9	7	17	33	19.5
Organic	13	5	6	24	14.2
Freedom from chemical residues	3	7	3	13	7.7
Free from soil	1	2	4	7	4.1
Variety	3	1	1	5	2.9
Freedom from pests and diseases		2	1	3	1.8
Size			2	2	1.2
Stem removed		1	1	2	1.2
Favourable prior purchase	1			1	0.6
Locally grown			1	1	0.6
Spinach is prepacked			1	1	0.6
Quality	1			1	0.6
	169				

Organic (68.0%) and freedom from chemical residues (55.8%) were the two most frequently cited variables given by respondents in purchasing fresh spinach which had been produced in an environmentally friendly manner (Table 11.25).

Freedom from pests and diseases (28.5%), locally grown (14.5%) and freedom from soil (10.5%) were also indicative of production systems that minimised damage to the environment.

The colour (1.2%), leaves (1.2%), size (0.6%) and prepacked (0.6%) were less often associated with spinach that had been cultivated in a manner that was good for the environment.

Table 11.25: The association between criteria utilised in the decision to purchase fresh spinach that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organic	95	16	6	117	68.0
Freedom from chemical residues	40	40	16	96	55.8
Freedom from pests and diseases	12	22	15	49	28.5
Locally grown	11	9	5	25	14.5
Free from soil	2	6	10	18	10.5
Freshness	5	3	3	11	6.4
Free from wilting		2	4	6	3.5
Freedom from blemish and bruise	1	1	2	4	2.3
Firmness of the stem	3			3	1.7
Colour	1	1		2	1.2
Leaves		2		2	1.2
Size	1			1	0.6
Spinach is prepacked	1			1	0.6
	172				

In obtaining spinach that had been produced with minimal harm to workers, freedom from chemical residues was the most frequently cited variable (54.5%) (Table 11.26).

Other variables which described how and where the spinach was grown, such as organically (34.4%) and locally (30.5%) were among the most frequently cited variables believed to produce spinach that had minimal impact on workers welfare.

A group of variables which described the physical appearance of the spinach such as colour (0.6%), leaves (0.6%), firmness of the stem (0.6%), size (0.6%), and without stem (0.6%) were less often associated with the protection of workers welfare. The place of purchase was another variable rarely associated with protecting workers welfare.

Table 11.26: The association between criteria utilised in the decision to purchase fresh spinach that protects worker welfare

Desired outcome 7: The food has been produced in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Freedom from chemical residues	48	26	10	84	54.5
Organic	33	15	5	53	34.4
Locally grown	34	11	2	47	30.5
Freedom from pests and diseases	7	12	10	29	18.8
Spinach is prepacked	10	4	1	15	9.7
Value for money	5	2	3	10	6.5
Spinach is tied in bunches	2	3	3	8	5.2
Freshness	4		3	7	4.5
Free from soil	2	1	3	6	3.9
Spinach is sold loose	1	2	2	5	3.2
Variety	2	1	2	5	3.2
Favourable prior purchase	2	1	1	4	2.6
Freedom from blemish and bruise	2		1	3	1.9
Free from wilting			2	2	1.3
Colour	1			1	0.6
Leaves		1		1	0.6
Firmness of the stem	1			1	0.6
Size		1		1	0.6
Stem removed			1	1	0.6
Place of purchase		1		1	0.6
	154				

Spinach which had been grown locally (63.8%) was considered by respondents to be the best indicator that the food was Halal (Table 11.27).

Organically grown (40.4%) and freedom from chemical residues (22.7%) were the two other variables considered most influential in the respondents' decision to purchase spinach that was considered Halal.

Variables which described the physical appearance of the product like freshness (7.8%), the absence of soil (4.3%), the firmness of the stem (0.7%) and freedom from wilting (0.7%) were seldom associated with Halal.

Table 11.27: The association between criteria utilised in the decision to purchase fresh spinach that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	Ranking			N	%
	1	2	3		
Locally grown	68	13	9	90	63.8
Organic	27	16	14	57	40.4
Freedom from chemical residues	12	15	5	32	22.7
Freedom from pests and diseases	5	4	7	16	11.3
Freshness	4	2	5	11	7.8
Favourable prior purchase	7	2		9	6.4
Label/brand	6	2		8	5.7
Free from soil	4	2		6	4.3
Variety	3	2	1	6	4.3
Spinach is prepacked	2	1	2	5	3.5
Colour	1	1		2	1.4
Value for money	1		1	2	1.4
Leaves		1		1	0.7
Firmness of the stem	1			1	0.7
Free from wilting			1	1	0.7
Size		1		1	0.7
Stem removed			1	1	0.7
	141				

All desired values were then ranked by respondents according to their importance. With regards to the purchase of fresh spinach, respondents preferred to purchase spinach that was perceived to be healthy and nutritious, safe to eat, guaranteed Halal, with a good taste and good texture or mouth feel (Table 11.28).

Table 11.28: Importance of criteria respondents use in their decision to purchase fresh spinach in a retail store

	Mean	SD
The food is healthy and nutritious	5.70[a]	0.59
The food is safe to eat	5.69[a]	0.61
The food is guaranteed Halal	5.49[a]	1.06
The food has a good taste	5.47[a]	0.75
The food had good texture/mouth feel	5.41[a]	0.76
The food represents value for money	5.29[b]	0.87
The food has been produced in a way that is good for the environment	5.15[c]	0.96
The food has been produced in a way that protects worker welfare	4.84[d]	1.19

where 1 is “not at all important” and 6 is “very important”

those items with the same superscript are not significantly different at p = 0.05

Spinach which represented good value for money was of secondary importance, followed by spinach that had been produced in a manner that had little impact on the environment. Spinach that had been produced in a manner that protected workers welfare was of least importance.

When dealing with dissatisfaction, some 22.6% of respondents were found to be always unhappy with the assurance that the spinach was Halal, while another 20.5% of respondents expressed concerns with regard to the health and nutritional status of the vegetable (Table 11.29).

Similarly, respondents often felt disappointment with the safety of the spinach purchased (17.9%), the value for money (16.3%), the poor texture/mouth feel (15.4%) and the bad taste (14.7%). Some respondents were unhappy with how the spinach had been produced and its impact on the environment (12.1%) and worker welfare (11.2%).

Although some respondents were disappointed, most others were generally satisfied. More than half of the respondents had never (or at worst one time in ten) experienced bad tasting spinach (59.4%) or spinach that was not Halal (59.2%). Most respondents had never (or at worst one time in ten) had an unpleasant experience when purchasing spinach that was considered unsafe (56.3%), unhealthy and non-nutritious (55.3%) or the texture/mouth feel of the vegetable undesirable (54.3%). Over half of the respondents interviewed had never or infrequently experienced spinach that had an adverse impact on the environment (53.3%), worker welfare (52.4%) or failed to deliver good value for money (51.1%).

Table 11.29: Occasions where respondents felt unhappy with the quality of fresh spinach purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 186	49.5	9.7	6.5	3.2	3.2	5.4	22.6	1.0	2.0
The food is healthy and nutritious. N = 190	41.6	13.7	8.4	4.2	4.7	6.8	20.5	1.0	2.0
The food is safe to eat. N = 190	43.7	12.6	8.9	2.6	7.4	6.8	17.9	1.0	2.0
The food represents value for money. N = 190	33.7	17.4	11.6	3.7	9.5	7.9	16.3	1.0	2.0
The food has good texture/mouth feel. N = 188	36.2	18.1	9.0	4.3	7.4	9.6	15.4	1.0	2.0
The food has a good taste. N = 190	34.7	24.7	8.4	3.2	6.3	7.9	14.7	1.0	2.0
The food has been produced in a way that is good for the environment. N = 182	41.2	12.1	11.0	6.0	6.0	11.5	12.1	1.0	2.0
The food has been produced in a way that protects worker welfare. N = 187	41.2	11.2	12.3	5.9	8.6	9.6	11.2	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

When respondents were dissatisfied with the quality of the fresh spinach they had purchased, most respondents (66.4%) indicated that it was not fresh (Table 11.30).

Other reasons given by respondents who expressed their dissatisfaction with the quality of the fresh spinach purchased included wilting (37.8%), a high price (25.2%), and

prior infestation by pests (20.9%). Not clean (17.5%), chemical residues (16.8%), poor taste (14.7%) and poor colour (14.7%) were the other reasons most often given for the respondents' dissatisfaction.

Table 11.30: Reasons for dissatisfaction with the quality of fresh spinach

	Ranking					N	%
	1	2	3	4	5		
Not fresh	44	35	11	4	1	95	66.4
Easily wilted	34	13	5	1	1	54	37.8
Price	10	12	8	5	1	36	25.2
Eaten by pests	13	4	10		3	30	20.9
Not clean	10	9	5	1		25	17.5
Contains chemical	8	8	6	2		24	16.8
Taste	11	4	3	1	2	21	14.7
Colour	6	7	4	4		21	14.7
Prepacked	2	6	2		2	12	8.4
Size	3	2	1	2		8	5.6
Availability	2			1	1	4	2.8
	143						

11.4 Part Three: The purchase of fresh apples

Respondents most often purchased fresh apples at least one time per week (37.9%) (Table 11.31).

Table 11.31: Frequency of purchasing fresh apples

	N	%
Everyday	0	0.0
2 – 3 times per week	18	8.0
Once a week	67	29.9
Once every two weeks	53	23.7
Once a month	61	27.2
Others	25	11.2
	224	100.0

The majority of respondents (75.0%) cited freshness as the variable they most often considered in their decision to purchase fresh apples from a retail store (Table 11.32).

Table 11.32: Variables respondents consider in their decision to purchase fresh apples

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	112	30	16	5	5	168	75.0
Price	19	23	20	26	8	96	42.9
Colour	23	36	22	8	2	91	40.7
Size/shape	15	32	21	12	5	85	37.9
Texture	25	20	19	2	1	67	29.9
No bruises	6	13	13	8	2	42	18.8
Taste	3	15	15	8	1	42	18.8
Country-of-origin	3	2	12	9	5	31	13.8
Types of apples	4	9	9	3	4	29	12.9
Freedom from chemical residues		3	5	6	11	25	11.2
Clean	2	8	7	3	3	23	10.3
Quality	7	8	6	1		22	9.8
Labels on the apples		3	4	2	1	10	4.5
Freedom from pests	1	1	2	2	1	7	3.1
Smooth skin	1	2	3			6	2.7
Ripeness	2			3		5	2.2
Nicely packed			1	1	2	4	1.8
I can self select		1	1	1	1	4	1.8
Location	1	1		1		3	1.3
Nutritious		1		1		2	0.9
Smell		1			1	2	0.9
Organic		1	1			2	0.9
	224						

Price (42.9%), colour (40.7%), size and shape (37.9%) comprised the second most frequently cited group. Several respondents emphasised the absence of bruises (18.8%), the taste (18.8%) and texture (29.9%). However, both taste and texture can only be evaluated post-purchase and hence respondents must give consideration to a range of other variables. Both the country-of-origin (13.8%) and the type/variety of apple (12.9%) were also frequently cited.

In making their decision to purchase apples from a retail store, the most important variables included freshness, freedom from blemishes and bruises, chemical residues, pests and diseases, firmness and skin colour, size and shape, value for money and competitive price (Table 11.33).

Table 11.33: Importance of variables influencing respondents' decision to purchase fresh apples

	Mean	SD
Freshness	5.79[a]	0.49
Freedom from blemish and bruise	5.71[a]	0.56
Freedom from chemical residues	5.64[a]	0.66
Freedom from pests and disease	5.63[a]	0.71
Firmness	5.49[a]	0.82
Skin colour	5.46[a]	0.73
Value for money	5.35[a]	0.88
Competitive price	5.25[a]	0.93
Size/shape	5.22[a]	0.94
Variety	4.89[b]	1.12
Country-of-origin	4.75[c]	1.16
Origin of the fruit	4.64[d]	1.31
Label or brand	4.54[d]	1.29
Organic	4.44[d]	1.36
Availability of product info in-store	4.42[d]	1.25
Favourable prior purchase	4.41[d]	1.38
Fruit is prepacked	4.24[e]	1.29
In-store tastings	4.21[e]	1.39
Waxed	4.11[f]	1.59
Newspaper advertising/catalogues	3.74[g]	1.42

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Advertisements in printed newspapers and catalogues was considered the least important variable by respondents in making their decision to purchase fresh apples from a retail store.

Principal component analysis revealed five factors which collectively explained 82.6% of the variance (Table 11.34).

Factor One, with an Eigenvalue of 3.82, captured three variables (in-store tastings, availability of product information in-store and newspaper catalogues). These variables clearly described components associated with the "promotion" of fresh apples. The Cronbach's alpha for this construct was 0.79. Nevertheless, this construct was the least important in the respondents' decision to purchase fresh apples.

Table 11.34: Factors influencing respondents' decision to purchase fresh apples

	Factor				
	1	**2**	**3**	**4**	**5**
In-store tastings	0.822				
Availability of product info in-store	0.814				
Newspaper advertising/catalogues	0.782				
Freedom from chemical residue		0.944			
Freedom from pests and disease		0.940			
Origin of fruit			0.902		
Country-of-origin			0.899		
Competitive price				0.885	
Value for money				0.884	
Skin colour					0.883
Size/shape					0.830
Eigenvalue	3.823	1.802	1.288	1.116	1.053
Percent variance	19.16	17.04	16.38	15.33	14.65
Cumulative variance	19.16	36.19	52.58	67.91	82.56
Cronbach's alpha	0.786	0.915	0.877	0.807	0.739
Factor mean	4.12^{d}	5.64^{a}	4.69^{c}	5.30^{b}	5.34^{b}

where those items with the same superscript are not significantly different at p = 0.05

Factor Two, with an Eigenvalue of 1.80, was labelled as "integrity" as it had two variables (freedom from chemical residues and freedom from pests and diseases). This construct accounted for 17.0% of the variance. The Cronbach's alpha for this construct was 0.92, indicating very high reliability. With the highest mean score, this construct had the most significant impact on the respondents' decision to purchase fresh apples.

Factor Three, with an Eigenvalue of 1.29, had two variables (origin and country-of-origin) which were clearly indicative of the origin of the product. The Cronbach's alpha was 0.88. However, in making the decision to purchase fresh apples, this factor was only the third most important construct.

Factor Four captured two variables (value and competitive price). This factor was label1ed as "value". With a Cronbach's alpha of 0.81, this was considered highly reliable. This factor, which was of equal importance to Factor Five, was the second most important in the respondents' decision to purchase fresh apples from a retail store.

Factor Five was labelled as “physical appearance”. This suggested that the skin colour, size and shape of the apple were important influences in the respondents’ decision to purchase fresh apples. The Cronbach’s alpha for this construct was 0.74. This construct was the second most important in the respondents’ decision to purchase fresh apples.

Respondents were then asked which variables they most often associated with eight desired outcomes.

Most respondents (77.2%) cited freshness as the most important indicator of good taste (Table 11.35).

Table 11.35: The association between criteria utilised in the decision to purchase fresh apples with a good taste

Desired outcome 1: The food has a good taste	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freshness	78	49	25	152	77.2
Skin colour	62	19	10	91	46.2
Firmness	18	19	25	62	31.5
Freedom from blemish and bruise	10	18	23	51	25.9
Country-of-origin	8	11	8	27	13.7
Size/shape	5	18	1	24	12.2
Freedom from chemical residues	2	6	7	15	7.6
Freedom from pests and diseases	1	3	6	10	5.1
Variety	5	3	1	9	4.6
Label or brand	1	3	5	9	4.6
Organic	3	2	3	8	4.1
Origin of the fruit	1	2	4	7	3.6
Favourable prior purchase	1		1	2	1.0
Waxed		1		1	0.5
Value for money	1			1	0.5
In-store tastings			1	1	0.5
Quality	1			1	0.5
Halal			1	1	0.5
	197				

To ensure that the apple purchased was delicious, other variables such as skin colour (46.2%), firmness (31.5%) and no blemishes and bruises (25.9%) were also considered by respondents. The price of the apple was observed to have little impact on the taste.

To ensure that the fruit was safe to eat, 71.8% of respondents cited freedom from chemical residues (Table 11.36).

Table 11.36: The association between criteria utilised in the decision to purchase fresh apples which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Freedom from chemical residues	65	52	23	140	71.8
Freedom from pests and diseases	43	27	23	93	47.7
Freedom from blemish and bruise	19	16	12	47	24.1
Organic	15	14	17	43	22.1
Freshness	22	10	7	39	20.0
Waxed	10	7	9	26	13.3
Skin colour	10	1		11	5.6
Origin of the fruit	2	5	3	10	5.1
Country-of-origin	3		6	9	4.6
Firmness		6	2	8	4.1
Size/shape	1	2		3	1.5
Label or brand		1	2	3	1.5
Favourable prior purchase	1	2		3	1.5
Fruit is prepacked		1	1	2	1.0
Availability of product info in store	2			2	1.0
Halal	1		1	2	1.0
Place of purchase	1			1	0.5
	195				

Other variables which were most often associated with food safety were freedom from pests and diseases (47.7%), freedom from blemishes and bruises (24.1%), organic apples (22.1%) and freshness (20.0%). From where the apples had been purchased (0.5%) was perceived to have little impact on whether the fruit was safe to eat.

More than one half of the respondents (60.5%) consider freshness to be a good indicator of whether the fruit was nutritious (Table 11.37).

Fruit without chemical residues (36.4%), no blemishes and bruises (28.2%), organically grown (20.5%) and free from pests and diseases (20.0%) were also frequently associated with healthy and nutritious fruit. Other indicators included skin

colour (19.5%) and firmness (18.9%). Price was not associated with good health and nutrition.

Table 11.37: The association between criteria utilised in the decision to purchase fresh apples with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	63	40	15	118	60.5
Freedom from chemical residues	27	21	23	71	36.4
Freedom from blemish and bruise	22	16	17	55	28.2
Organic	20	12	8	40	20.5
Freedom from pests and diseases	15	13	11	39	20.0
Skin colour	20	12	6	38	19.5
Firmness	9	17	11	37	18.9
Waxed	2	1	8	11	5.6
Size/shape	3	5	2	10	5.1
Origin of the fruit	2	3	1	6	3.1
Favourable prior purchase	4	1		5	2.6
Label or brand	2	1	1	4	2.1
Variety	2	1		3	1.5
Fruit is prepacked	1		1	2	1.0
Availability of product info in store		1	1	2	1.0
Quality	2			2	1.0
In-store tastings	1			1	0.5
Newspaper advertising/catalogues			1	1	0.5
Halal			1	1	0.5
	195				

Competitive price (40.6%), followed by value for money (30.5%) and freshness (25.1%) were the variables most often associated with value for money (Table 11.38).

Conversely, those variables which were considered to have little association with the value judgement were freedom from pests and diseases (1.1%), availability of product information in-store (1.1%), quality (1.1%), intended use (0.5%) and Halal (0.5%).

Table 11.38: The association between criteria utilised in the decision to purchase fresh apples that represented good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	46	22	8	76	40.6
Value for money	32	12	13	57	30.5
Freshness	29	13	5	47	25.1
Label or brand	10	9	8	27	14.4
Size/shape	12	9	5	26	13.9
Variety	5	9	10	24	12.8
Firmness	8	6	7	21	11.2
Country-of-origin	3	7	6	16	8.6
Fruit is prepacked	11	2	1	14	7.5
Organic	5	4	3	12	6.4
Freedom from chemical residues	4	2	4	10	5.3
Origin of the fruit	1	7	2	10	5.3
Freedom from blemish and bruise	6	2	1	9	4.8
Newspaper advertising/catalogues	3	1	5	9	4.8
In-store tastings	1	4	3	8	4.3
Favourable prior purchase	3	3	2	8	4.3
Skin colour	5	1	1	7	3.7
Waxed		1	2	3	1.6
Freedom from pests and diseases		1	1	2	1.1
Availability of product info in store		1	1	2	1.1
Quality	2			2	1.1
Intended use	1			1	0.5
Halal			1	1	0.5
	187				

Freshness (46.1%) and firmness (43.5%) were the variables that were most often associated with a good texture or mouth feel (Table 11.39).

Other variables such as skin colour (38.3%), freedom from blemishes and bruises (32.1%), and size and shape (26.4%) were also considered good indicators of the desired texture or mouth feel.

Organic (3.1%), label/brand (2.6%) and prepacked (2.1%) were rarely associated with good texture and mouth feel.

Table 11.39: The association between criteria utilised in the decision to purchase fresh apples with good texture/mouth feel

Desired outcome 5: The food has good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	45	32	12	89	46.1
Firmness	32	29	23	84	43.5
Skin colour	51	17	6	74	38.3
Freedom from blemish and bruise	13	30	19	62	32.1
Size/shape	24	14	13	51	26.4
Variety	6	1	4	11	5.7
Freedom from chemical residues	5	2	4	11	5.7
Waxed		1	7	8	4.1
Country-of-origin	2	3	1	6	3.1
Freedom from pests and diseases	1	2	3	6	3.1
Origin of the fruit	2		4	6	3.1
Organic	3	1	2	6	3.1
Label or brand	3	1	1	5	2.6
Fruit is prepacked	3		1	4	2.1
Favourable prior purchase	2	1		3	1.6
Value for money			1	1	0.5
In-store tastings		1		1	0.5
Quality	1			1	0.5
	193				

Organic production (63.6%) and freedom from chemical residues (58.7%) were most often associated with fruit that had been produced in a way that was good for the environment (Table 11.40).

Table 11.40: The association between criteria utilised in the decision to purchase fresh apples that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organic	89	13	15	117	63.6
Freedom from chemical residues	41	55	12	108	58.7
Freedom from pests and diseases	16	14	10	40	21.7
Freshness	10	3	2	15	8.2
Country-of-origin	5	3	6	14	7.6
Origin of the fruit	5	4	4	13	7.1
Label or brand	4	4	2	10	5.4
Freedom from blemish and bruise	3	3	2	8	4.3
Waxed	1	1	6	8	4.3
Availability of product info in-store	1	3	3	7	3.8
Skin colour	2	1	2	5	2.7
Firmness	1	1	3	5	2.7
Fruit is prepacked	3		2	5	2.7
Size/shape		3		3	1.6
Newspaper advertising/catalogues	2	1		3	1.6
Variety			1	1	0.5
In-store tastings	1			1	0.5
Halal			1	1	0.5
	184				

Freedom from chemical residues (48.4%) and organically grown (36.6%) were also most frequently associated with fruit that had been grown in such a way as to protect worker welfare (Table 11.41).

Table 11.41: The association between criteria utilised in the decision to purchase fresh apples that protects worker welfare

Desired outcome 7: The food has been produced in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Freedom from chemical residues	41	27	10	78	48.4
Organic	31	15	13	59	36.6
Freedom from pests and diseases	11	8	5	24	14.9
Country-of-origin	12	5	3	20	12.4
Competitive price	10	7	2	19	11.8
Availability of product info in store	9	6	2	17	10.6
Origin of the fruit	10	2	4	16	9.9
Fruit is prepacked	9	3	3	15	9.3
Newspaper advertising/catalogues	4	4	4	12	7.5
Value for money	7	2	1	10	6.2
Label or brand	5	3	2	10	6.2
Freshness	3	4	2	9	5.6
Freedom from blemish and bruise	2	1	1	4	2.5
Intended use			4	4	2.5
Skin colour	1	1		2	1.2
Variety			2	2	1.2
Waxed	2			2	1.2
Size/shape		1		1	0.6
In-store tastings	1			1	0.6
Favourable prior purchase	1			1	0.6
Place of purchase	1			1	0.6
Quality	1			1	0.6
	161				

In determining if the fruit was guaranteed Halal, 38.7% of respondents mentioned the label or brand (Table 11.42).

Other variables most frequently cited included organic (27.9%), country-of-origin (26.8%), the origin of the fruit (23.8%), freedom from chemical residues (23.2%) and the availability of product information in-store (17.9%).

Waxed (0.6%), prepacked fruit (0.6%) and place of purchase (0.6%) were seldom associated with the Halal status of the fruit.

Table 11.42: The association between criteria utilised in the decision to purchase fresh apples that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	Ranking			N	%
	1	2	3		
Label or brand	38	19	8	65	38.7
Organic	31	10	6	47	27.9
Country-of-origin	20	18	7	45	26.8
Origin of the fruit	12	15	13	40	23.8
Freedom from chemical residues	19	13	7	39	23.2
Availability of product info in-store	14	8	8	30	17.9
Newspaper advertising/catalogues	7	4	2	13	7.7
Freshness	7	2	2	11	6.5
Freedom from pests and diseases	5	3	2	10	5.9
Favourable prior purchase	6		1	7	4.2
Skin colour	1	2	1	4	2.4
Halal	3	1		4	2.4
Size/shape		2		2	1.2
Freedom from blemish and bruise	2			2	1.2
In-store tastings		1	1	2	1.2
Waxed	1			1	0.6
Fruit is prepacked	1			1	0.6
Place of purchase	1			1	0.6
	168				

The importance of the desired values were then ranked by respondents. Five of the desired values were ranked as being of similar importance to respondents in their decision to purchase fresh apples; food safety, health and nutrition, good taste, good texture and mouth feel and guaranteed Halal (Table 11.43).

Table 11.43: Importance of criteria respondents use in their decision to purchase fresh apples in a retail store

	Mean	SD
The food is safe to eat	5.74[a]	0.55
The food is healthy and nutritious	5.69[a]	0.63
The food has a good taste	5.69[a]	0.61
The food had good texture/mouth feel	5.47[a]	0.76
The food is guaranteed Halal	5.45[a]	1.15
The food represents value for money	5.31[b]	0.85
The food has been produced in a way that is good for the environment	5.00[c]	1.07
The food has been produced in a way that protects worker welfare	4.65[d]	1.29

where 1 is “not at all important” and 6 is “very important”

those items with the same superscript are not significantly different at p = 0.05

The second most important desired value ranked by respondents was value for money, followed by apples which had been produced in a way which had minimal impact on the environment. Protecting worker welfare was the least important value respondents considered in their decision to purchase fresh apples.

A total of 27.2% of respondents were often disappointed with the Halal status of the apples, while another 21.1% of respondents were often found to be dissatisfied with the safety of the fruit (Table 11.44).

Table 11.44: Occasions where respondents felt unhappy with the quality of fresh apples purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 213	55.4	6.1	4.7	0.9	1.4	4.2	27.2	1.0	1.0
The food is safe to eat. N = 218	41.7	12.8	6.0	4.6	3.7	10.1	21.1	1.0	2.0
The food is healthy and nutritious. N = 218	38.1	14.7	7.8	6.0	5.0	11.0	17.4	1.0	2.0
The food represents value for money. N = 216	26.9	24.5	8.3	6.0	7.4	11.6	15.3	1.0	2.0
The food has a good taste. N = 218	20.2	26.2	11.5	7.8	10.1	11.0	12.8	2.0	3.0
The food has good texture/mouth feel. N = 214	23.4	23.4	13.1	5.1	6.5	15.9	12.6	1.0	3.0
The food has been produced in a way that is good for the environment. N = 205	38.5	12.7	10.7	6.8	7.8	13.2	10.2	1.0	2.0
The food has been produced in a way that protects worker welfare. N = 211	42.2	11.8	9.5	8.1	6.6	4.2	7.6	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

Some 17.4% of respondents were also found to be often dissatisfied with the health and nutrition of the fruit and a further 15.3% of respondents did not believe that the fruit delivered good value for money. Some respondents (12.8%) were often unhappy with the taste, texture/mouth feel (12.6%) and how the apples had been produced in a way that was good for the environment (10.2%). Only 7.6% of the respondents were often disappointed with the way in which the apples had been produced and how that impacted on the welfare of the workers.

Nevertheless, more than half of the respondents (61.5%) had hardly ever or in the worst case, only one time in ten, had an unpleasant experience with the Halal status of the apples purchased. Most respondents rarely experienced disappointment with the food safety (54.5%) of the apples purchased, production methods that protected workers welfare (54.0%), health and nutrition (52.8%), good value for money (51.4%) or production that had an adverse impact to the environment (51.2%). Most respondents had never (or at worst one time in ten) experienced poor texture/mouth feel (46.8%) or poor taste (46.4%) in their purchase of apples from a retail store.

However, the reasons respondents most often gave for their dissatisfaction with the quality of the apples purchased was the poor texture (45.4%) and poor taste (41.6%) (Table 11.45).

Not fresh (37.8%), rotten (29.7%), bruises (29.7%) and a high price (23.8%) were the other reasons most frequently cited as having caused dissatisfaction.

Table 11.45: Reasons for dissatisfaction with the quality of fresh apples

	Ranking					N	%
	1	2	3	4	5		
Texture	35	26	16	4	3	84	45.4
Taste	28	21	16	9	3	77	41.6
Not fresh	45	10	7	4	4	70	37.8
Rotten	27	17	8	1	2	55	29.7
Bruises	18	26	1	8	2	55	29.7
Price	7	14	17	2	4	44	23.8
Too waxy	7	10	4	6	3	30	16.2
Size/shape	2	2	5	2	1	12	6.5
Prepacked	5		2	3	1	11	5.9
Skin colour	1	4	3	1	1	10	5.4
No label/no brand	2	1	1	3		7	3.8
Eaten by pests	2	1	2	1		6	3.2
No variety due to seasonal factor	3			1	1	5	2.7
I did not select properly	3					3	1.6
	185						

11.5 General view of fresh fruit and vegetables purchased

When respondents experienced dissatisfaction with the quality of the fresh fruit and vegetables they had purchased, most respondents were more selective on the next occasion that they purchased (Table 11.46).

Table 11.46: What respondents do when dissatisfied with quality of fresh fruit and vegetables purchased from a retail store

	Mean	SD
I am more selective the next time I buy	5.39[a]	0.99
I am always satisfied with my purchase	4.57[b]	1.14
I change shops	4.41[b]	1.29
I inform/complain to the seller	4.18[b]	1.44
I throw them out	4.04[c]	1.49
I change brands	4.01[c]	1.50
I purchase less	3.96[c]	1.48
I return it to the shop	3.66[d]	1.45
I stop buying	3.59[d]	1.64
I just eat it/cook it	2.76[e]	1.52
I do nothing	2.35[e]	1.57

where 1 is “I disagree a lot” and 6 is “I agree a lot”

those items with the same superscript are not significantly different at p = 0.05

Others may choose to discontinue purchasing from that shop or to advise the retailer about their dissatisfaction.

Other respondents simply discard the poor quality produce they had purchased, change brands or even purchase in a lesser quantity. Moreover, respondents who were very demanding might return the poor quality produce to the shop or discontinue purchasing the product.

Most respondents were confident that the majority of the fresh fruit and vegetables purchased were safe to eat (Table 11.47).

Table 11.47: Confidence level

	Mean	**SD**
How confident are you that the fresh fruit and vegetables that you consume are safe to eat	4.57	0.89

where 1 is “not at all confident” and 6 is “very confident”

Freshness (39.9%) was the most frequently cited variable used by respondents in determining that the fresh fruit and vegetables they had purchased were safe to eat (Table 11.48).

Past experience (23.6%), freedom from chemical residues (22.9%), the label (20.9%), the texture (20.9%), the country-of-origin (18.9%) and the place of purchase (15.1%) were also frequently cited. Price was seldom mentioned as an indicator that the fresh produce purchased from a retail store was safe to eat.

Table 11.48: Factors which lead respondents to conclude that the fresh fruit and vegetables purchased were safe or not safe to eat

	Ranking					N	%
	1	2	3	4	5		
Freshness	55	29	14	2	3	103	39.9
Based on previous experience	30	18	10	1	2	61	23.6
Freedom from chemicals residues	19	16	11	7	6	59	22.9
Label	22	14	11	6	1	54	20.9
Texture	19	18	12	3	2	54	20.9
Country-of-origin	18	18	8	5		49	18.9
Place of purchase	15	10	11	3		39	15.1
Quality	17	9	2	3	1	32	12.4
Safe to eat	10	7	6	4	1	28	10.9
Skin colour	9	10	4	2	1	26	10.1
Clean	5	12	5	1	2	25	9.7
Organic	8	2	5	8		23	8.9
Taste	5	6	4	3	1	19	7.4
Value for money	2	3	5	4	2	16	6.2
The way fruit and vegetables were grown	4	4	3	3		14	5.4
I always go to the same vendor	5	3	3	1	2	14	5.4
Reference from newspaper, internet, friends.	5	2	1	3	2	13	5.0
No smell	2	3	3	2	1	11	4.3
Prepacked	3	5	2			10	3.9
Free from bruises	1	2	3	2	1	9	3.5
Size	2	1	2	1		6	2.3
The food is healthy and nutritious	2		1			3	1.2
Variety		1		1		2	0.8
Chilled			1			1	0.4
	258						

Most respondents were quite confident about the way the Malaysian government was managing Halal and organically produced food (Table 11.49).

However, respondents were less confident about the way the Malaysian government managed several other issues such as waste management, water pollution, microbial contamination and chemical residues.

Table 11.49: Confidence level how Malaysian government manages the following

	Mean	SD
Halal	4.80[a]	1.15
Organically produced food	4.31[a]	1.20
Country-of-origin	4.13[b]	1.14
Sustainable production	4.02[b]	1.13
Fair trade	3.99[b]	1.16
Functional foods/probiotics	3.87[b]	1.24
Conservation biodiversity	3.82[b]	1.17
Recycling packaging	3.75[c]	1.32
Hormones, antibiotics and growth promotants	3.69[c]	1.21
Animal welfare	3.69[c]	1.22
Genetically modified fruit and vegetables	3.69[c]	1.26
Waste management	3.59[d]	1.29
Water pollution	3.58[d]	1.29
Microbial contamination	3.55[d]	1.29
Chemical residues	3.51[d]	1.38

where 1 is "not at all confident" and 6 is "very confident"
those items with the same superscript are not significantly different at p = 0.05

Most respondents (79.6%) had at some time boycotted a particular food due to food safety concerns (Table 11.50).

Table 11.50: Avoided or boycotted a particular food product due to food safety

	N	%
Yes	211	79.6
No	54	20.4
	265	

Most respondents (65.3%) however, boycotted a particular food product on only a temporary basis (Table 11.51).

Table 11.51: Methods of boycotting

	N	%
Temporary	113	65.3
Permanent	60	34.7
	173	

The main reason for deciding to boycott a particular food product was a food safety issue (30.0%) (Table 11.52).

Table 11.52: Reasons for boycotting

	N	%
Until proven safe to eat	79	30.0
Halal issues	56	21.3
Current issues in newspaper, television	43	16.3
China products	25	9.5
Quality of the product	21	7.9
Dissatisfied with the food product	18	6.8
Too expensive	7	2.7
Origin of the food	7	2.7
Government instruction	5	1.9
Retailers were not friendly	2	0.8
	263	

Respondents had also boycotted a particular food product when they had doubts about the Halal status (21.3%), followed by current issues reported in either the print or electronic media (16.3%).

11.6 Review

The analysis revealed that the frequency of purchasing fresh spinach was the highest compared to fresh apples and potatoes. This could be influenced by the shorter storage life of fresh spinach. Scientists from University Park in the United States of America demonstrated that fresh spinach will loose its nutritional value when stored for more than a few days (Storage time and temperature effects nutrients in spinach 2005). Most respondents were found to consume fresh spinach almost immediately after purchase. Furthermore, the high frequency of purchasing fresh spinach could be associated with the popularity of the vegetable among Malaysians. In Hussin (2008), apart from mustard, cabbage and convolvulus, spinach was mentioned as one of the leafy vegetables most often purchased by Malaysians.

Price was another factor which impacted on the frequency of purchasing fresh spinach. Spinach is much cheaper compared to the price of apples and potatoes. It was reported by the Malaysian Department of Statistics (The consumer price index Malaysia - January 2008) that the price indexes of some vegetables had declined in early 2008, which included spinach (-2.7%). Given that this survey was conducted during that period, a low price could justify the increased frequency of purchasing fresh spinach.

Although the findings revealed that fresh potatoes were infrequently purchased by respondents, potatoes are commonly used in preparing curries and soups.

Freshness was the most frequently cited variable which influenced the respondents' decision to purchase fresh potatoes, spinach and apples from a retail store. However, the indicators of freshness varied across the different types of fruit and vegetables (Lai et al. 1998). In the case of potatoes and apples, the physical appearance of the produce was described by the skin colour, texture, size and shape. For spinach, the physical appearance was visually assessed by the colour and the appearance of the leaves. Cleanliness (without soil) was also frequently cited by respondents in their decision to purchase potatoes and spinach. Von Alvensleben and Meier (1990), state quite emphatically that when purchasing fresh produce, 'consumers buy with their eyes'.

Since Malaysian consumers are very price sensitive (Malaysian market opportunities report n.d.), price was another variable frequently cited by respondents as influencing their decision to purchase fresh produce from a retail store. Indeed, price was more frequently cited by respondents compared to quality for all three products. This implies that respondents are prepared to trade-off quality in order to obtain a cheaper price when purchasing fresh fruit and vegetables. According to van der Pol and Ryan (1996), ideally, consumers seek the highest quality fresh fruit and vegetables at a lowest possible price. Nevertheless, both researchers indicated that consumers may be willing to pay more to obtain better quality food.

Since potatoes and apples were imported, the retail prices of both products were perceived to be higher than the price of spinach in the market, which was a concern for many respondents. This may also explain why the country-of-origin was among the most frequently cited variables by respondents in their decision to purchase fresh potatoes and apples. Potatoes imported into Malaysia originate from countries such as China, India, Australia, New Zealand and Indonesia (Rahim 2007). Due to the high demand for potatoes in Malaysia, about 70.0% of Indonesia's potato exports are destined for Malaysia (Adiyoga et al. 2001). Most Asian grown potatoes are valued for their versatility (multi-purpose usage) and low price compared to Western grown potatoes (One potato, two potatoes 2006). However, from the qualitative findings of this research, participants from the focus group discussions indicated that their preferences for potatoes from a specific country was highly dependent on the meal they intended to prepare. For example, Russet Burbank potatoes from the USA were commonly used to make french fries or baked potatoes.

With regard to apples, Monem and Collins (2000) reveal that Malaysian consumers prefer red apples imported from the USA, followed by Australia and New Zealand. In addition, both researchers have also demonstrated that Malaysian consumers prefer not to purchase apples imported from China.

When there is little opportunity to taste food in store, consumers often rely on the label or brand name. Verbeke et al. (2008) found that food quality labels on fresh fruit and vegetables focus on the origin and the safety aspects of the production method. Food quality labels seldom indicate that branded fresh fruit and vegetables taste any better than fruit and vegetables without labels. Batt and Sadler (1999) confirmed that for most actors in the supply chain (growers, retailers and consumers) labels on apples did not suggest that the apples tasted any better than unlabelled fruit. Fotopoulos and Krystallis (2003) demonstrated that labels on apples were not important for more than a third of the consumers in their study. Verbeke et al. (2008) found that the buyers and non-buyers of labelled fruit have different views about the labels. The non-buyers were only interested in labelled tomatoes if; (1) no other tomatoes were available; (2) no

information was available for other tomatoes; and (3) labelled tomatoes were proven to be more healthy.

A total of six variables were identified as being of equal importance to respondents in their decision to purchase fresh fruit and vegetables (Table 11.53).

Table 11.53: Importance of variables influencing respondents' decision to purchase fresh fruit and vegetables

Potatoes	Spinach	Apples
Freshness	Freshness	Freshness
Firmness	Free of wilting	Freedom from blemish and bruise
Freedom from chemical residues	Leaves	Freedom from chemical residues
Freedom from pests and diseases	Freedom from pests and diseases	Freedom from pests and diseases
Value for money	Colour	Firmness
Freedom from sprouting	Freedom from chemical residues	Skin colour
Skin colour	Freedom from blemish and bruise	Value for money
Intended use	Firmness of stem	Competitive price
Competitive price	Value for money	Size/shape
Tuber size		

The variables were grouped accordingly; physical appearance (freshness, firmness, freedom from pests and diseases, and colour), food safety (freedom from chemical residues) and value (value for money). An additional four variables were found to be influential in the respondents' decision to purchase fresh potatoes; freedom from sprouting, tuber size, intended use and competitive price. For spinach, respondents also valued good leaves, freedom from wilting and freedom from blemishes and bruises. For apples, respondents perceived freedom from blemishes and bruises, size/shape and competitive price to be important.

Principal component analysis identified different constructs according to the type of fresh produce (Table 11.54).

Table 11.54: Factors influencing respondents decision to purchase fresh fruit and vegetables

Potatoes	Spinach	Apples
Physical appearance, value and usage Prior experience Promotions	Quality Safe Convenience	Integrity Value and physical appearance Origin Promotions

In the case of fresh potatoes, five constructs were identified and grouped according to importance; value, physical appearance, usage, prior experience and promotion. The findings were compared to Batt (2009) where five constructs were also identified as influencing Australian consumers' decision to purchase fresh potatoes. However, the categorisations according to importance were entirely different between Australian and Malaysian consumers. For example, Malaysian consumers perceived value as being the most important factor when purchasing fresh potatoes, while Australian consumers emphasised the importance of freedom from pests and diseases, no sprouting, freshness and firmness. Price and value was the second most important variable for Australian consumers in making their decision to purchase fresh potatoes. Somewhat unexpectedly, issues surrounding food safety such as freedom from chemical residues and freedom from pests and diseases were found to be of little importance to Malaysian consumers when purchasing fresh potatoes from a retail store. This result however, was similar to the findings by Jemison et al. (2008), where consumers in the USA ranked source and skin quality as the most important characteristics when purchasing fresh potatoes. This was followed by size, skin colour, flesh colour, variety and cleanliness. Price and organic were the third group of variables ranked by respondents as having some impact on the purchase of fresh potatoes. If consumers were concerned with the usage of chemicals in the production of potatoes, organic would have a higher ranking.

In the case of fresh spinach, principal component analysis identified and grouped three constructs which influenced respondents' decision to purchase. The three constructs were quality, safety and convenience. Quality was further described by freshness, good leaves and freedom from wilting. This finding was similar to Slosser (2006), as visual

quality and appearance, which are indicators of value and quality, were the key factors which most influenced consumers' decision to purchase fresh spinach from a retail store. The quality of the spinach was assessed by the fresh appearance of the product. Consumers were found to be less likely to purchase spinach that looked old and unappealing. Wilting was another indicator of quality. Slosser (2006) described wilting as being affected by travel conditions, time to market and the presence or absence of refrigeration. Since wilting is noticeable and increases over time, this variable was considered important by respondents in their decision to purchase fresh spinach. Concepcion (2009) revealed that price was the main variable consumers in the Philippines used in their decision to purchase fresh vegetables (which included spinach). However, in the case of fresh spinach, price was not found to be among the more important factors influencing the respondents' decision to purchase, as fresh spinach was significantly cheaper (RM2 per bunch) compared to apples (RM1 per fruit – medium size) and potatoes (RM3.00/kg to RM4.00/kg – depending on the origin of the potatoes).

Safe (organic, size, favourable prior purchase and locally grown) was the second most important criteria ranked by respondents in their decision to purchase fresh spinach. In organic farming, the use of inorganic fertilisers and pesticides is prohibited. Implicitly, this revealed that respondents were concerned with the potential presence of chemical residues. Similarly, consumers in the Philippines rated food safety among the most important factors which influenced their decision to purchase fresh spinach (Concepcion et al. 2006). However, in the absence of pesticides, there is a high probability that pests and diseases will infect the crop, dramatically reducing the visual appearance. Slosser (2006) added that the presence of bugs and holes in the leaves may have a negative influence on the consumers' decision to purchase fresh spinach.

A total of five constructs were identified as influencing the respondents' decision to purchase fresh apples from a retail store. The constructs were integrity, physical appearance, value, origin and promotion. Respondents have shown their concern towards the presence of chemical residues and freedom from pests and diseases in their

decision to purchase fresh apples compared to potatoes and spinach. Baker (1999) confirmed that consumers in the USA placed greater importance on food safety attributes in their purchase of fresh apples. Malaysia is one of the major importers of Chinese apples (Issues paper for the import risk analysis for fresh apples fruit from the People's Republic of China 2008). According to Zeitner (2006), the over use of pesticides and fertilisers in apple production in China is common. Furthermore, in the absence of information from government agencies with regards to the origin of most imported goods, respondents placed greater importance on the country-of-origin in their decision to purchase fresh apples.

Prescott et al. (2002) confirmed that Malaysian consumers were less concerned about the production systems involved in their food choice, and placed greater concerns on health, natural ingredients, weight control and convenience. Due to the time period between both studies, the demand and needs of consumers have changed, and thus the findings of this study reveal that Malaysian consumers are beginning to learn and acquire more information about the production process for the food they have purchased.

The physical appearance (skin colour, size/shape) and value (price and value for money) were ranked as the second most important constructs in the respondents' decision to purchase fresh apples in Malaysia. Sadler (1997) and Batt (2004) however, identified firmness as the most important criteria used by consumers in Western Australia when purchasing fresh apples. The visual appearance (freedom from blemishes, colour and size) and variety apparently came after firmness. Similar to Peneau et al. (2006), physical appearance was the second most important variable in the respondents' decision to purchase fresh apples. However, when the selection of apples was made based on appearance, consumers may have different preferences according to familiarity, attitudes, age, gender, and the frequency of purchase (Harker 2001; Peneau et al. 2006).

The findings reveal that the promotional variables (in-store tastings, the availability of product information and newspaper advertising/catalogues) were the least important criteria respondents considered when purchasing fresh apples from a retail store. Despite the relatively low importance consumers attach to the promotional variables, Batt and Sadler (1999) indicated that consumers still respond to promotions.

Freshness and physical appearance were the most frequently cited group of variables to indicate good taste and good texture/mouth feel (Table 11.55).

Table 11.55: Group of variables respondents relate with good taste and good texture/mouth feel

Desired outcome	Potatoes	Spinach	Apples
The food has a good taste	Freshness Physical appearance: firmness, flesh colour, skin colour	Freshness Physical appearance: colour, leaves, free of wilting, firmness of stem, freedom from blemishes and bruises	Freshness Physical appearance: skin colour, firmness, freedom from blemishes and bruises
The food has good texture/mouth feel	Physical appearance: Firmness Freshness Physical appearance: flesh colour, skin colour	Freshness Physical appearance: firmness, colour, free of wilting, good leaves, freedom from blemishes and bruises	Freshness Physical appearance: firmness, skin colour, freedom from blemishes and bruises, size/shape

Firmness and colour were the most common variables which described the physical appearance of all three fresh products and were most often associated with good taste and good texture/mouth feel. British and Danish consumers were reported to have strong preferences towards the freshness of apples (Jaeger et al. 1998). Fresh apples, were described as hard and crisp, with a juicy texture, a grassy odour and white flesh, compared to apples which had become mealy, with a spongy texture and soapy flavour. Dinehart et al. (2006) identified appearance, texture and taste as important determinants influencing the consumption of fresh vegetables. Additional attributes describing the physical appearance depended on the characteristic of the produce itself; such as flesh

colour for fresh potatoes; leaves free from wilting and free from blemishes and bruises for fresh spinach; free from blemishes and bruises and size/shape for fresh apples.

Price and value were less often associated with good taste. This indicated that paying a higher price did not imply that fresh produce would taste any better. Organically grown fruit and vegetables are usually associated with the need for consumers to pay a higher price. However, whether organic produce tastes any better than conventionally grown produce is debatable. According to Fillion and Arazi (2002), the belief that organic produce does taste better than conventionally grown produce is a major consideration influencing the consumers' willingness to pay a premium price. Lester (2006) found that consumers who do not purchase organic food believed that organic fruit and vegetables did not taste any better than conventionally grown produce. In contrast, research undertaken in Australia revealed that the majority of respondents who purchased organic produce believed that organic food was much tastier than conventional food (Lea and Worsley 2005). Nevertheless, the high cost involved was found to present a significant barrier for consumers in purchasing organically grown food.

Freedom from chemical residues and freedom from pests and diseases were the two most frequently cited variables which indicated that the fresh produce was safe to eat (Table 11.56).

Table 11.56: Group of variables respondents relate with food safety

Desired outcome	Potatoes	Spinach	Apples
The food is safe to eat	Freedom from chemical residues Freedom from pests and diseases	Freedom from chemical residues Freedom from pests and diseases	Freedom from chemical residues Freedom from pests and diseases

However, these two variables were considered to be negatively correlated, for if the produce was to be free from pests and diseases, chemical pesticides were invariably used. Concepcion et al. (2006) reported that farmers in Mindanao believed that

consumers placed most importance on freshness and price, and were not concerned about the presence of chemical residues. Quite the opposite, the results of this study suggest that Malaysian consumers are very concerned about chemical usage in the production of fresh potatoes, spinach and apples. The Malaysian government has introduced better farming practices to reduce the usage of chemicals and hazardous substances through the Malaysian Farm Accreditation Scheme (SALM) and Malaysian Organic Scheme (SOM), as well as through revising the Pesticides Act 1974 (Ahmad and Juhdi 2008). However, little information is available to consumers.

The findings of this research concur with Baker (1999) where consumers, known as "Safety Seekers", have shown a greater preference for reduced pesticides when purchasing Red Delicious apples. Baker (1999) added that consumers were found to be willing to pay substantially more for fresh produce grown with less pesticide. This issue, however, was not included in this research. Although consumers prefer to purchase apples grown with fewer pesticides, Baker (1999) mentioned that the supply of this type of produce was limited. Ahmad and Juhdi (2008) concur with Baker (1999), for they found that products with fewer chemicals such as organic produce were only available from selected supermarkets in Malaysia.

Freshness was the most frequently cited variable for all three products that was related to health and nutrition (Table 11.57).

Table 11.57: Group of variables respondents relate with health and nutrition

Desired outcome	Potatoes	Spinach	Apples
The food is healthy and nutritious	Freshness, freedom from chemical residues Freedom from pests and diseases, organic, firmness, skin colour, flesh colour	Freshness Organic, colour and freedom from chemical residues	Freshness Freedom from chemical residues, freedom from blemishes and bruises, organic and freedom from pests and diseases

Eating fresh fruit and vegetables are fundamental elements of healthy eating (Paquette 2005). Willett (1990) [cited in Beech et al. 1999] suggested that increasing the daily consumption of fresh fruit and vegetables could reduce lung cancer, as well as the risk of other cancers of the stomach, pancreas and colon. Consumers consider fresh produce to be more nutritious than processed products (Shewfelt 2006). By examining the visual features of the product (freshness), consumers conclude that the food to be purchased is more healthy and nutritious.

Other variables, which revolved around healthy and nutritious food included: freedom from chemical residues and organic. Organic is often associated with food that is perceived to be more healthy and nutritious. For example, Worthington (2001) found that organic crops contained significantly more vitamin C, iron, magnesium and phosphorus and less protein, nitrates and lower amounts of heavy metals compared to conventionally grown crops. Lea and Worsley (2005) demonstrated that the majority of Australian consumers believed that organic food was more healthy than conventional food. This argument is also supported by Lester (2006), who added that most consumers (which include high users of organic and the non-consumers of organics), believed that fruit and vegetables produced without pesticides were more healthy. Consumers in the UK mentioned that organically grown food was more natural and healthy than conventionally produced food (Yiridoe et al. 2005).

Value for money and freshness were the two most frequently cited variables that were associated with value for money (Table 11.58).

Table 11.58: Group of variables respondents relate with value for money

Desired outcome	Potatoes	Spinach	Apples
The food represents value for money	Competitive price, value for money, freshness Tuber size, intended use, label/brand	Value for money, freshness Spinach is sold loose, variety and spinach is tied in bunches	Competitive price, value for money, freshness Label/brand, size/shape, variety and firmness

In Batt (2009), value (competitive price and value for money) was considered to be the second most important variable in the respondents' decision to purchase fresh potatoes from a retail store. While, competitive price was frequently cited by respondents in their decision to purchase fresh potatoes and apples, this variable was not cited in the decision to purchase fresh spinach. As discussed earlier, this arose because the price of spinach was so much cheaper than the other two products.

Beside cost, Caswell (2000) described value in terms of the benefits the product delivered. Tuber size, intended use and label/brand were indicators of value for the purchase of fresh potatoes. From the qualitative findings, participants from the focus group discussions revealed how the purchase of fresh potatoes from a retail store very much depended on the meal that was to be prepared. For example, small size potatoes were used for curries, while Russet Burbank potatoes from the USA were best for making fries. Caswell (2000) included convenience as a criteria which further described the value attributes. As suggested by Batt (2009), female consumers, who are involved directly in preparation of the meal for the household, placed greater importance on the size, shape and firmness when purchasing fresh potatoes, given that these variables impact on the amount of wastage during the food preparation process.

As for spinach, value signifies variety, whether the spinach is sold loose or tied in bunches. Findings from the qualitative study suggested that some participants prefer to purchase spinach that is tied in bunches, given that the price is relatively cheaper. In contrast, other participants indicated that they dislike purchasing pre-packed spinach, for it may contain defect plants. These consumers perceived value as the ability to self-select their fresh spinach.

Value indicates label/brand, size/shape, variety and firmness of apples. According to Bowbrick (1992) [cited in Batt and Sadler 1999], a label attached to a product which contains information about the product origin, aims to convince consumers about the quality, safety and value for money of the product. However, in contrast to the findings of this research, the majority of consumers in Western Australia suggested that labels

on apples did not indicate quality, nor did labels bring any additional value (Batt and Sadler 1999).

Organic, freedom from chemical residues and freedom from pests and diseases were frequently cited by respondents as being associated with fresh fruit and vegetables that had been produced with minimal impact on the environment (Table 11.59).

Table 11.59: Group of variables respondents relate with food that has been produced in a way that is good for the environment and protects worker welfare

Desired outcome	Potatoes	Spinach	Apples
The food has been produced in a way that is good for the environment	Organic Freedom from chemical residues, freedom from pests and diseases, locally grown	Organic, freedom from chemical residues Freedom from pests and diseases, locally grown	Organic, freedom from chemical residues Freedom from pests and diseases
The food has been produce in a way that protects worker welfare	Freedom from chemical residues Organic, locally grown	Freedom from chemical residues Organic, locally grown	Freedom from chemical residues, organic Freedom from pests and diseases, country- of-origin

According to Yiridoe et al. (2005), the concept of organically grown food is commonly related to the production process, which includes aspects such as natural production systems, environmental friendliness and the limited usage of chemicals in the production process. Hansen (2001) [cited in Yiridoe et al. 2005], indicated that consumers value the importance of organic by examining two aspects; the general attributes of the product (food safety, health concerns, impact on the environment, animal and worker welfare), as well as the commodity-specific attributes (appearance, taste and freshness). Consumers' attitudes towards these criteria may influence their decision to purchase organically grown produce. For example, although solid domestic waste is a major environmental problem in Malaysia (Ahmad and Juhdi 2008), this may or may not be the reason why consumers purchase organic food. In Huang (1996), and Hutchins and Greenhalgh (1997) [cited in Yiridoe et al. 2005], consumers show

more concern towards health and food safety, rather than the environmental impact when purchasing organically grown food. In contrast, Davies et al. (1995) indicated that concern for the environment was one of the main factors which influenced consumers' decision to purchase organic produce. The finding of this research concurs with Ahmad and Juhdi (2008), who revealed that organic buyers in Malaysia believe that organic product helps to protect the environment.

Freedom from chemical residues, organic and where the crop was grown were also perceived to be related to the protection of worker welfare. According to Hanson et al. (2004), farmers who were being exposed to the regular application of pesticides, have a higher chance of experiencing chronic illness, compared to the general population. Thrupp (2002) [cited in Hanson et al. 2004] suggested that farmers who were concerned about the usage of chemical pesticides were more motivated to change to organic farming. As indicated by the Soil Association in the UK [cited in Morgan and Murdoch 2000], organic farming practices involve natural production systems (with the absence of chemicals), that enhance the farm environment and lessen the social and ecological impact of agricultural production systems on the environment. Caswell (2000) and Yiridoe et al. (2005) further demonstrated that among the key differences between organically grown and conventionally grown produce, organic production placed more importance on animal welfare, genetic modification, environmental impact, pesticide use and worker welfare. Clearly, respondents demonstrated the relationship between credence cues (freedom from chemical residues, freedom from pests and diseases, organic and the origin of the produce) and the method of production.

Origin and label/brand were the two most frequently cited variables which indicated that the food was Halal (Table 11.60).

Table 11.60: Group of variables respondents relate with Halal

Desired outcome	Potatoes	Spinach	Apples
The food is guaranteed Halal	Locally grown, label/brand, country-of-origin Place of purchase, availability of product information in-store, organic	Locally grown Organic, freedom from chemical residues	Label/brand Organic, country-of-origin, origin of the fruit, freedom from chemical residues, availability of product information in-store

Although fresh fruit and vegetables are naturally Halal, with the impact of globalization, consumers are exposed to a wider range of foreign products in the market. In the absence of product information about the origin of the product and the manner in which the food has been produced, consumers may doubt the Halal status of the product. For example, Muslims consumers have concerns about the application of animal manure, especially from pigs, which are often used as fertiliser. It is mandatory for producers in the fresh produce industry in the USA to label their produce with County-of-Origin Labelling (COOL) to provide shoppers with information on the origin of the product (Mabiso et al. 2005).

Although different criteria were related to different desired values, there were similarities in a number of variables utilised by respondents that were related to specific desired values.

Respondents ranked the importance of the desired values in a very similar manner for all three products (Table 11.61).

Table 11.61: Importance of criteria respondents use in their decision to purchase fresh fruit and vegetables in a retail store

Potatoes	Spinach	Apples
The food is safe to eat. The food is healthy and nutritious. The food is guaranteed Halal. The food has a good taste. The food had good texture/mouth feel.	The food is healthy and nutritious. The food is safe to eat. The food is guaranteed Halal. The food has a good taste. The food had good texture/mouth feel.	The food is safe to eat. The food is healthy and nutritious. The food has a good taste. The food had good texture/mouth feel. The food is guaranteed Halal.

Respondents preferred to purchase fresh fruit and vegetables that were safe to eat, healthy and nutritious, guaranteed Halal, with a good taste and good texture/mouth feel. Similarly, Bordeleau et al. (2002) revealed that when talking about the quality of fresh fruit and vegetables, consumers emphasised the food safety and nutritional aspects of the product, as well as the sensory parameters.

In terms of the place of purchase, consumers' preferences for fresh fruit and vegetables which are safe, nutritious and guaranteed Halal can be most easily met by the modern retailers. This finding was supported by Berdegue et al. (2005), who indicated how supermarkets have the capacity to invest and practice new technologies to implement higher safety standards. The modernisation and development of traditional retailers should be in line with the changes and needs of consumers who are demanding safer and healthier food. Reardon and Berdegue (2002) suggested that traditional retailers should seek to improve the quality of services (cleanliness and safety measures) rather than to concentrate on product quality.

Although most fruit and vegetables are Halal, respondents were often dissatisfied with the Halal status of all three products (Table 11.62).

Table 11.62: Occasions where respondents felt unhappy with the quality of fresh fruit and vegetables purchased with regard to the following desired outcomes

Potatoes	Spinach	Apples
The food is not guaranteed Halal.	The food is not guaranteed Halal.	The food is not guaranteed Halal.
The food is unsafe to eat.	The food is unhealthy and not nutritious.	The food is unsafe to eat.
The food is unhealthy and not nutritious.	The food is unsafe to eat.	The food is unhealthy and not nutritious.
The food does not represent value for money.	The food does not represent value for money.	The food does not represent value for money.
The food has a poor texture/mouth feel.	The food has a poor texture/mouth feel.	The food has a bad taste.
The food has a bad taste.	The food has a bad taste.	The food has a poor texture/mouth feel.
The food has not been produced in a way that is good for the environment.	The food has not been produced in a way that is good for the environment.	The food has not been produced in a way that is good for the environment.
The food has not been produced in a way that protects worker welfare.	The food has not been produced in a way that protects worker welfare.	The food has not been produced in a way that protects worker welfare.

Respondents were often dissatisfied with the safety of potatoes and apples and the health and nutritional value of spinach. These findings concur with Salleh et al. (2007), who mentioned that consumers were concerned about food safety, particularly in terms of pesticide residues in their purchase of fresh produce. Respondents in this study have a strong reason to be alarmed about the safety of the fresh fruit and vegetables given that it was reported by Jackson (2008), who indicated that Malaysian authorities had found melamine in the fruit and vegetables imported from China. Given that fresh produce from China makes up more than three-quarters of the imported fruit and vegetables in the Malaysian market, the Health Minister of Malaysia has assured worried consumers that fresh produce imported from China is safe for consumption (Malaysia - fruits and veggies from China safe to eat 2008). The Ministry of Health Malaysia further explained that fresh produce imported from China has been classified under Level 4 (Surveillance Examination) of the Food Safety Information System of Malaysia, which signifies that consignments are permitted to enter the country after samples have been taken for testing. Malaysian consumers should not be concerned over the safety level of the fresh fruit and vegetables available in the Malaysian market,

given that a total of 57 samples of fruit and vegetables from China were found to be melamine-free (Malaysia - fruits and veggies from China safe to eat 2008).

Locally grown vegetables were also perceived to be safe for consumption. The Agri-Food and Veterinary Authority of Singapore an assurance that fresh vegetables imported from Malaysia were not affected by any cancerous pesticides (Nie 2007). In promoting and ensuring the quality and food safety of fresh produce, farmers in Malaysia are being encouraged to adopt several Good Agricultural Practice (GAP) schemes (Salleh et al. 2007). For example, under the Malaysian Farm Accreditation Scheme (SALM), farmers must conform to several requirements before a certificate of conformity is issued. The requirements include: (1) farm inspections, where the type of land is inspected in order to identify any unknown materials that may be toxic. Water for irrigation must be from a clean source and not polluted with industrial waste; (2) verification of farm practice, which ensures that farmers must not use components such as genetically modified planting materials and industrial waste as fertilisers. Only registered pesticides may be applied to the crops planted and recommended rates of pesticides used as stated on the labels; and (3) residue analyses of farm produce and water, where samples of produce from the farm are analysed for pesticide residues and heavy metals. Given that various GAP schemes may enhance the level of consumers' confidence with regards to the quality and safety of locally grown fresh produce, Salleh et al. (2007) mentioned that the government may make it mandatory for farmers to implement these schemes.

The study revealed that for all three products, the respondents were least dissatisfied about the manner in which the crops produced had impacted on the environment and worker welfare. While these two areas were of least concern to the consumers, it is an area of interest for the government of Malaysia. Salleh et al. (2007) mentioned that among the motives for the government to encourage farmers to adopt GAP is the government's concern for the environment (such as the amount of pesticide residues disposed of in soil or in rivers and severe soil erosion) and to ensure the welfare of

farm workers (which includes a proper dress code for farmers spraying pesticides and concerns for the health and well-being of farmers).

Cross-tabulations were conducted to identify which group of respondents (according to clusters) were more or less dissatisfied with which desired outcomes. The results indicated that there were no significant differences between the clusters and each desired outcome that respondents were dissatisfied with. This indicated that the dissatisfaction with the quality of fresh fruit and vegetables was not related to the place of purchase. Respondents' dissatisfaction with the purchase of fresh produce was more related to the product itself.

The level of consumer dissatisfaction was highly dependent on the type of product, type of consumer, and the consumers' expectations of the product (Adebanjo 2001). The main reasons for dissatisfaction revolved around freshness, the appearance of the fresh produce, taste (experience quality) and price (Table 11.63).

Table 11.63: Reasons for dissatisfaction with the quality of fresh fruit and vegetables

Potatoes	Spinach	Apples
Rotten	Not fresh	Texture
Not fresh	Easily wilted	Taste
Too soft	Price	Not fresh
Sprouting	Eaten by pests	Rotten
Taste	Not clean	Bruises
Price	Contains chemical	Price

Beside freshness, the respondents showed a much greater concern for the taste of potatoes and apples compared to spinach. In the case of apples, Batt and Sadler (1999) indicated that soft and floury apples represent poor quality, which signified that the fruit has been stored too long or kept under poor conditions.

12. Discussions and conclusions

12.1 Chapter outline

This final chapter seeks to conclude the thesis by directly addressing the research objectives. The discussion will begin with a summary of the respondents involved in this study. Next, the discussion on quality and store choice attributes will be presented. The findings from the previous chapters on respondents' purchase of fresh/chilled meat and fresh fruit and vegetables will then be synthesised in order to evaluate any similarities or differences in the purchase of the two types of food product. The managerial implications of the findings are then presented. Several limitations of the study are also outlined, followed by recommendations for future research in which this study could be extended.

12.2 Summary of the respondents

The sample for both surveys consisted of 554 respondents living in the Klang Valley region. The majority of respondents in this study were females, aged between 26 and 44 years old, most of who were married and were of Malay descent. Most respondents from both surveys possessed at least an undergraduate degree or a professional certificate. The majority of respondents were employed either within the private sector, the government sector or owned their own business. In terms of income, most respondents for both surveys were from the middle income group, earning between RM2,000 to RM4,000 per month.

From both surveys, the findings revealed that most respondents had three or four people living in the same household, where they had at least one child under the age of 18 who lived together in the same household. Overall, the findings from both surveys found that the residential areas of the respondents were scattered around the Klang Valley region.

In trying to improve the response rates and reducing fatigue of both the field workers and the respondents, surveys were collected through an approach where both surveys were conducted during the same time period (10 am to 8 pm everyday

for a whole week) and in the same place (stationed at a particular retail outlet for a whole week). The researcher found this approach successful and as a result of this, the samples drawn for both surveys possessed similar characteristics.

With regards to the overall sample for this study, several limitations are identified: (1) the lack of participation from mature aged respondents; and (2) the low response rate from other ethnic groups such as the Chinese and Indian. Furthermore, expatriates who were residing in the Klang Valley region were purposefully excluded from participating in the survey as this study sought to capture the perceptions and experiences of Malaysian consumers when purchasing fresh food from a retail store. Therefore, the findings from this study may not represent the larger population residing in the Klang Valley region. By including more respondents from the mature age group, and through involving more Chinese, Indian and ethnic groups from Sabah and Sarawak, it is hoped that those researchers which wish to replicate this study will get a better representation of the population in the Klang Valley.

12.3 Conclusions

12.3.1 Quality

Objective 1: To gain an understanding of how consumers describe quality in purchasing fresh/chilled meat and fresh fruit and vegetables.

Freshness and cleanliness were among the two most frequently cited variables given by respondents when they thought about the quality of the fresh/chilled meat and fresh fruit and vegetables purchased from a retail store (Table 12.1).

Table 12.1: Variables respondents consider when they think about the quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (82.8%) Halal (57.6%) Cleanliness (43.6%)	Freshness (93.2%) Price (40.9%) Cleanliness (31.2%)

Given that the characteristics of fresh/chilled meat and fresh fruit and vegetables are very different from each other, it was no surprise to find that the attributes which defined freshness for both food products was also very different. The variables which described freshness will be further discussed in the next section. Beside freshness, the findings also revealed that Halal was frequently cited when respondents thought about the quality of the fresh/chilled meat they purchased from a retail store. This finding concurs with Riaz and Chaudry (2004) who mentioned that Halal was perceived to offer the highest standard of quality for Muslim and for many non-Muslim consumers.

When comparing between the indicators of quality, price was the second most frequently cited variable for fresh fruit and vegetables, whereas price was the fourth most frequently cited variable for fresh/chilled meat. This does not mean that consumers care less about the price when thinking about meat, for as indicated by Becker et al. (2000), consumers do not always assume that a higher price will lead to superior quality.

A total of seven variables were afforded the highest measure of agreement when respondents described the meaning of quality for fresh/chilled meat and fresh fruit and vegetables (Table 12.2).

Table 12.2: The meaning of quality of fresh food

Quality means that the product …	
Fresh/chilled meat	**Fresh fruit and vegetables**
is fresh. is safe to eat. is guaranteed Halal. is nutritious. is free from chemical residues. is free from pests and disease. I will not be disappointed when I eat the product. is free from antibiotics/growth promotants. will taste good. I will be able to use most if not all of the product I have purchased. is good value for money.	is fresh. is safe to eat. is free from chemical residues. is nutritious. I will not be disappointed when I eat the product. is good value for money. is free from pests and disease.

The quality of both types of food products revolved around freshness, food safety (safe to eat, free from chemical residues, free from pests and disease), nutrition and value (will not be disappointed when eating the product and good value for money). These findings concur with Wandel and Bugge (1997).

Given that the characteristics are different for both products, respondents in the fresh/chilled meat survey also considered several additional criteria which signified quality. These variables included Halal, the meat being free from antibiotics or growth promotants, good taste and the respondents' capacity to use most of the product purchased. Taste, which was perceived to be an indicator of good quality, was not present in the findings from those who responded to the fresh fruit and vegetables survey. As mentioned by Abbott (1999), besides nutritional value, chemical constituents, mechanical properties, functional properties and defects, quality encompasses sensory properties which were described by the appearance, texture, taste and aroma.

Principal component analysis identified food safety as the most important construct in the respondents' evaluation of quality for both fresh/chilled meat and fresh fruit and vegetables (Table 12.3).

Table 12.3: Factors influencing quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Safe Meat production Utility	Food safety issues and value for money Utility of packaging

However, different variables were utilised by respondents when describing that the food was safe to eat. Freshness and food that is safe to eat was indicative of the safety for fresh/chilled meat, whereas freedom from chemical residues, pests and diseases, safe to eat and nutritious were indicative of the construct for fresh fruit and vegetables. However, without a quality signal such as labelling, Caswell (2000) suggested that consumers will have difficulty in judging the amount of pesticide residues and the potential contamination of the food by foodborne pathogens.

Meat production was identified as the second most important criteria respondents considered in assessing the quality of the fresh/chilled meat they purchased. Respondents were concerned about the environment, farmers welfare and animal welfare. These findings concur with McEachern and Schroder (2002), where high-involvement consumers, who are willing to spend time, effort, money and actively seek product information, demand both tangible quality attributes (freshness) and intangible quality attributes (animal welfare, production aesthetics and rural sustainability) when purchasing fresh/chilled meat. However, the findings did not reveal or suggest that similar ethical considerations for the environment or farmers' welfare played any role in signifying the quality of fresh fruit and vegetables. Wandel and Bugge (1997) found that only 15.0% of respondents gave environmentally sound production first priority in determining the quality of fresh fruit and vegetables. Other variables such as taste, freshness, appearance and nutritional value were found to be significantly more important in determining the quality of fresh fruit and vegetables. Ethical issues were found to be of more concern for farmers than consumers, given that most consumers have insufficient knowledge about food production systems and practices (Borsari 2003).

12.3.2 Store choice

Objective 2:

2a. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional outlet).

2b. To identify any significant difference in the importance of these quality cues by the place of purchase (modern retail outlet or traditional outlet).

2c. To segment respondents according to the importance of these quality cues in purchasing fresh/chilled meat and fresh fruit and vegetables by their preferred retail store.

The second objective for this research study revolved around consumers store choice behaviour when purchasing fresh food. The data analysis for consumers' store choice behaviour revealed several similarities and differences in the purchase of fresh/chilled meat and fresh fruit and vegetables from their preferred retail store. The first similarity identified was in terms of the most preferred place to purchase

both fresh food products. The study found that traditional markets were the most preferred place to purchase fresh/chilled meat (66.4%) and fresh fruit and vegetables (53.5%).

The study also revealed that there were no substantial differences in terms of the frequency of purchase, where 66.2% of fresh/chilled meat shoppers and 68.7% of fresh produce shoppers purchased these fresh food items at least one time per week.

Freshness and price were the two variables most frequently cited by respondents for both surveys in their choice of retail store (Table 12.4).

Table 12.4: Variables respondents consider in their decision to purchase fresh food from their most preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (85.2%)	Freshness (83.3%)
Price (69.6%)	Price (73.7%)
Cleanliness (54.0%)	Variety/a lot of choices (27.0%)
Halal (39.2%)	Quality (25.6%)
Variety/a lot of choices (25.2%)	Cleanliness (23.3%)

However, freshness was described differently according to the place of purchase. In the traditional markets, freshness of the meat sold was determined by its 'warmth', given that the chicken or cattle had been slaughtered that same day (Goldman and Hino 2005). Furthermore, in determining the freshness of the meat, shoppers who purchased from the traditional market were allowed to touch the meat that was being displayed on retail counters. In contrast, Hsu and Chang (2002) and Krystallis et al. (2007) described how the freshness of the meat sold in most modern retail outlets was maintained by the use of chillers and freezers.

As for vegetables, Goldman et al. (1999) described how the freshness of vegetables was maintained in traditional markets by constantly trimming and spraying the produce with water. The situation is again different in most modern retail outlets. In order to keep vegetables fresh, Dolan et al. (1999) found that horticultural producers have to comply to certain quality standards, where vegetables are picked, prepared, fully labelled and transported to supermarket shelves within 48 hours. The

freshness of fruit and vegetables sold in supermarkets was determined by the label that contained information regarding the date of packaging and “use by” date.

Price was also associated with the place of purchase. Goldman et al. (1999), Berdegue et al. (2005) and Tam (n.d.) suggested that fresh food products in most traditional markets were generally cheaper than those purchased from modern retail outlets. On the other hand, Hsu and Chang (2002) revealed that fresh meat purchased from the traditional markets in Taiwan was generally more expensive compared to the price offered by supermarkets. Given that the price of fresh food products in the modern retail outlets and traditional markets was not recorded in this study, it was not possible to conclude which retail store offered the best price for their shoppers.

The concept of Halal emerged as one of the most frequently cited variables by respondents in their decision to purchase fresh/chilled meat from a retail store. Halal is most commonly related to the consumption of meat, because it involves the method by which the animal has been slaughtered. On this basis, Halal is seldom related to the consumption of fresh fruit and vegetables. In a Muslim country such as Malaysia, the concept of Halal is an essential prerequisite for consumption (Shafie and Othman 2006). Riaz and Chaudry (2004) agree that it is a Muslims’ religious obligation to make an effort to obtain and consume food that is Halal. This study concludes in a similar manner to Bonne and Verbeke (2006), that the role of religion is one of the most important factors influencing the shoppers’ decision to purchase fresh/chilled meat from a retail store.

In the absence of any certification to guarantee compliance with Halal procedures for fresh/chilled meat sold in traditional markets, consumers rely on their most trusted source, which is their preferred butcher/vendor. As demonstrated by Bonne and Verbeke (2006), personal trust with the consumers’ preferred butcher replaces the institutionalised quality signals (labels) provided by third party Halal assurances. Similarly, Ahmed (2008) reveals that the majority of Muslims in the UK purchased meat from local butchers because they trusted that the meat sold in these shops was Halal. Despite carrying Halal labels, Ahmed (2008) found that the majority of Muslim consumers were not confident in purchasing meat from

supermarkets because they do not know by whom and how the meat had been slaughtered.

Cleanliness of the store was one of the most frequently cited variables given by respondents which influenced their decision to purchase fresh food from their most preferred retail outlet. There is a great difference between the cleanliness and the condition of a modern retail outlet as compared to the traditional market. It was reported by Goldman et al. (1999), Muharam (2001), Hsu and Chang (2002), Bougoure and Lee (2009) that consumers described the condition of most traditional markets as wet, slippery, dirty and smelly. In contrast, Suryadarma et al. (2010) described supermarkets as clean and hygienic, with ample lighting, which provided superior comfort to shoppers compared to traditional markets. Consumers who placed greater importance on cleanliness may choose to purchase their fresh food from retail stores which they think are clean and comfortable to visit.

More respondents from the meat survey cited cleanliness (54.0%) as one of the variables they considered in their decision to purchase, compared to respondents from the fresh fruit and vegetable survey (23.3%). Respondents may perceive that meat products are more susceptible to contamination than fresh fruit and vegetables. This could lead to food safety issues in relation to consumers' purchase of meat from a retail store. The linkage of these quality attributes will be further discussed in the following section (Objective Five). However, regardless of the poor conditions, traditional markets still remain competitive in providing fresh meat and fresh fruit and vegetables for Malaysian consumers.

Although variety was also among the most frequently cited variables considered by respondents in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from their preferred retail outlet, the variable was discussed in quite different ways according to the place of purchase. For shoppers who preferred to visit supermarkets and hypermarkets, the concept of variety covered not only the availability of many types of fresh food in store, but also the opportunity for shoppers to purchase other groceries, household and personal items in-store (Dholakia 1999; Reardon et al. 2003). In contrast, the concept of variety experienced by shoppers when visiting the traditional markets was primarily about

the greater range of fresh food, which included not only fresh meat and fresh produce, but also fish and seafood products (Goldman et al. 1999; Zinkhan et al. 1999). Consumers in Malaysia are able to experience a diversity of fresh food and non-food products when visiting the traditional markets, given that the farmers' market and night markets are now offering a greater variety of fresh food, frozen food, ready-to-eat food, and other non-food products (such as clothing, gardening items, toys and books).

Given that the characteristics of both fresh/chilled meat and fresh fruit and vegetables are vastly different, this study finds that shoppers emphasised very different criteria in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store (Table 12.5).

Table 12.5: Factors influencing respondents' criteria of preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Quality	Perceived risk
Perceived risk and Convenience	Convenience and value
Price	Attributes of modern retail outlets
Characteristics of a modern retail outlet	

Quality was ranked as the most important consideration in the respondents' decision to purchase fresh/chilled meat from a retail outlet. Similar to the literature, quality was signified by attributes such as freshness (Wandel and Bugge 1997; Becker et al. 2000; Glitch 2000; Grunert et al. 2004; Jabbar and Admassu 2009) and cleanliness (Jabbar and Admassu 2009). These researchers also described quality by the use of other attributes such as colour, origin, taste and tenderness. In contrast, these attributes were not revealed in this study. Although Halal was considered to be an important criteria in influencing respondents in their decision to purchase fresh/chilled meat, the study found that the concept of Halal was not grouped under quality.

The findings suggest that consumers prefer shopping at retail stores that provide high quality fresh meat in a clean environment. However, which retail store offers the best quality fresh/chilled meat is based on the individual's perceptions and judgements of the product. Cleanliness of the premise or the equipment used to cut

the meat is something that can be clearly observed in person. Lui (2008) suggests that traditional markets and supermarkets provide a polarised physical experience to consumers such as “dirty” opposed to “clean”, or an “unpleasant” versus a “comfortable” environment. If the quality of fresh/chilled meat is determined solely on the cleanliness of the retail store, supermarkets and hypermarkets will have the advantage over traditional markets.

Perceived risks also emerged as an important variable in the respondents’ choice of a retail store from which to purchase fresh fruit and vegetables. A total of seven criteria emerged, which included: (1) a wide range of fresh produce, (2) a wide range of other fresh produce, (3) the product was easily accessible, (4) the product was clearly priced, (5) the product was clearly labelled, (6) good quality produce and (7) the ability to self-select the produce that the consumer wanted to buy. Respondents placed a great deal of importance on the information contained on the label when purchasing fresh produce from a retail store. These findings concur with Beharrell and MacFie (1991), Caswell (2000), Batt (2009) and Fernqvist and Ekelund (2009). In Malaysia, given that much of the fresh produce is imported from various countries including China, India, Australia, Indonesia and the USA (Rahim 2007), it is not unreasonable for respondents to want to obtain more information about the product they intend to purchase in order to minimise perceived risks.

Assuming that fresh fruit and vegetables are clearly labelled in both modern retail stores and traditional markets, the perceived risk in terms of the safety of the produce may well be guaranteed, given that the origin and production method are known by the consumers. At this point in time, the probability of consumers purchasing their fresh produce from either type of retail outlet is similar because most items are generic (unbranded) and are not labelled. For instance, most consumers are unable to differentiate the quality of fresh fruit and vegetables from countries like Australia and New Zealand, with fresh produce imported from China without the presence of a label. Given that most fruit and vegetables are unbranded, this important search attribute is often absent (Bech-Larsen 2000). Therefore, the risks associated with generic food items are perceived to be common for both retail outlets. Brooker (1984) found that performance risk was that most often associated with the purchase of generic food products. This was expected, given that it is

difficult for consumers to predict the performance of a product without the presence of a quality cue such as brand name. Bech-Larsen (2000) added that since most fresh fruit and vegetables are unbranded and unpacked, the absence of packaging may cause the products to perish more easily which further increased the risk of poor product performance. Brooker (1984) then demonstrated that the risk of product failure would naturally lead to a financial risk. When consumers pay for a product, they presume that the product will deliver according to their expectations. Conversely, when a product fails to deliver, it will result in a financial loss for the consumer. Beside performance and financial risk, Bech-Larsen (2000) associated the concern for food safety with most unbranded fruit and vegetables, for without the product information obtained from labels, it was more difficult for the consumer to assess attributes such as food safety and production methods.

Given that fresh/chilled meat is considered to be a high involvement food product, Verbeke and Vackier (2004) mentioned that there is a need for consumers to obtain adequate information regarding the product in order to evaluate the product attributes prior to purchase. The results of this study concur with the literature, which revealed that perceived risk was the second most important criteria respondents considered in their decision to purchase fresh/chilled meat from their preferred retail store. Despite the presence of a label, most of the variables which described perceived risk for the purchase of fresh/chilled meat were different from those used to evaluate the purchase of fresh fruit and vegetables from a retail store. A fast checkout, local produce, origin, trading hours and loyalty were included for fresh meat, while two variables (product easily accessible and clearly labelled) were common to both products.

The accessibility of the meat was different between retail outlets. Hsu and Chang (2002) mentioned that fresh meat is displayed on counters or hung on hooks in most traditional markets in Taiwan. This situation is similar in Malaysia, for it gives consumers easy access to examine the meat prior to purchase. Hsu and Chang (2002) also mentioned that fresh meat available from modern retail outlets is pre-cut and pre-packaged and displayed on temperature controlled shelves. Some consumers preferred fresh/chilled meat to be displayed this way because it was nicely packed, clean and convenient to choose.

In order to reduce the risk in terms of the safety of meat products, Becker et al. (2000), Bernues et al. (2003) and McEachern and Seaman (2005) mentioned the importance of labelling. Concurrently, there are arguments which indicate that the labelling of meat products through traceability systems and quality assurance schemes limit consumers' trust. Gellynck et al. (2006) demonstrated that not all information contained on the labels were utilised by consumers in their decision to purchase fresh meat. The most important and most widely used information was the expiry date, meat type, weight and price, whereas the less important information included the slaughter date, nutritional value, origin and brand. Rimal (2005) mentioned that consumers' attitudes toward meat labels was influenced by socio-economic differences, where for example, consumers with a higher level of education were more likely to read labels and utilise the information in their purchasing decision.

Origin of the meat was also considered to reduce the perceived risk and thus influence where respondents were most likely to purchase their fresh meat. Given that the production of meat in Malaysia, particularly beef, is not sufficient to meet the local demand (Mohamed 2007), beef is imported from countries such as India, Pakistan, Australia and New Zealand, as well as several South American countries such as Brazil, Uruguay and Argentina (Meat Trade News Daily 2009). Therefore, it is no surprise to learn that respondents placed considerable importance on the origin of the meat in order to lessen the perceived risks involved in their purchase. From which country the meat was imported may also indicate the Halal status of the meat.

In making the decision to purchase fresh/chilled meat and fresh fruit and vegetables from any retail outlet, the concept of convenience was the second most important factor considered by respondents. However, the concept of convenience was found to differ appreciably between the different retail stores. Convenience was explained by variables such as easy parking (Hsu and Chang 2002; McKinna et al. 2007), near my house or place of work (Goldman and Hino 2005; McEachern and Seaman 2005; McKinna et al. 2007) and everything under one roof (Farhangmehr et al. 2001; Bonne and Verbeke 2006). Hsu and Chang (2002) mentioned that supermarkets often provide a large parking area where shoppers find it easy to park

their vehicle. Conversely, respondents from the focus groups mentioned that it was difficult to find parking when shopping at traditional markets. Goldman and Hino (2005) found that the distance and travelling time to shop influenced consumers choice of retail outlet. Farhangmher et al. (2001) revealed that consumers who like the convenience of buying everything in the same place prefer supermarkets or hypermarkets. Conversely, Bonne and Verbeke (2006) suggested that consumers who purchased their fresh meat from traditional stores may also purchase other products from modern retail outlets. Convenience is important for shoppers to ease their shopping experience in terms of reducing effort and time when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. Shoppers are looking for convenience due to factors such as the changing role of women (from a homemaker to having a career), which increases their participation in the workforce (Boyle 2002; Reimers and Clulow 2004; Buckley et al. 2005; Scholderer and Grunert 2005).

Price and value was also ranked among the most important factors considered by respondents in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. It was difficult to make a direct comparison on which retail outlet offered the best price for fresh/chilled meat and/or fresh fruit and vegetables given that: (1) prices for both types of fresh food was not recorded in this study and (2) the prices of the food involved in both surveys differed from one another. The only similarity found was the capacity for shoppers to bargain on the price for fresh/chilled meat and fresh fruit and vegetables when purchasing from a traditional retail outlet. This factor was an advantage for traditional retailers, given that bargaining, which was identified as a cultural practice similar to shoppers in Brazil (Zinkhan et al. 1999) and Vietnam (Maruyama and Trung 2007), was important for many consumers in Malaysia. In contrast, although prices for most products offered in modern retail outlets are fixed, the price of fresh/chilled meat and fresh fruit and vegetables are often perceived to be more competitive, particularly during promotions. Consumers who are sensitive towards changes in price will shift to that retail outlet where they can gain better value for money in purchasing their fresh food.

Five similar criteria (air-conditioned, advertising on radio/tv/newspaper, catering for kids, credit facilities and shopping points/loyalty programs) were grouped together by respondents from the fresh/chilled meat survey and the fresh fruit and vegetable survey to describe the characteristics of a modern retail outlet. Modern retail outlets provide their shoppers with a good shopping environment (Trappey and Lai 1997) and are able to cater better in fulfilling the needs of many consumers (Goldman and Hino 2005). Accepting credit card payments (Sinha and Banerjee 2004), offering shopping points to loyal customers (Sharp and Sharp 1997; Uncles et al. 2003) and advertising products through printed and electronic media (Lui 2008) were also characteristics of supermarkets and hypermarkets as discussed in the literature. The differences between both surveys were identified when respondents from the fresh/chilled meat survey included the presence of trolleys and shopping baskets and respondents from the fresh produce survey included the return/refund policy in describing the characteristics of supermarkets and hypermarkets. Pettigrew et al. (2005) found that trolleys and baskets were important shopping aids particularly for female and elderly shoppers when they do their grocery shopping from a supermarket. In order to attract more elderly shoppers to shop at supermarkets, these outlets should become more “senior-friendly”, where investments need to be made for trolleys that are highly manoeuvrable and do not require elderly shoppers to bend too far to store and retrieve items. Pettigrew et al. (2005) added that many supermarkets now provide shoppers with smaller trolleys, trolleys with a shallow tray at waist height and baskets with wheels. This provides an advantage for most modern retailers.

Providing shoppers with refunds or an exchange for defective products was another criteria which was found to differentiate the experience of shopping from a modern retail outlet as opposed to the traditional market. Kim (2008) found that supermarkets such as E-Mart provide a 100% refund or exchange policy for their customers even without any receipt or proof of purchase. Although this variable described another formal practice of large supermarket and hypermarket chains, product returns and refunds do take place in most traditional markets. However, the findings from the focus group discussions revealed that some participants reported that returning a product was much easier to do in traditional markets than supermarkets, given that the vendors recognise and trust their regular customers.

This was supported by the findings of Huong (n.d.) which indicated that some Vietnamese consumers have strong preferences for traditional markets because the return and refund policies do not involve a long waiting process and the complaint is done directly with the vendor.

In segmenting respondents according to the type of fresh food purchased and their preferred retail store, cluster analysis identified two clusters (modern retail shoppers and traditional market shoppers) for the fresh/chilled meat survey, and three clusters (modern retail shoppers, transient shoppers and traditional market shoppers) for the fresh fruit and vegetables survey (Table 12.6).

Table 12.6: Cluster of respondents by the place of purchase

Fresh/chilled meat		**Fresh fruit and vegetables**		
Modern retail shoppers	Traditional market shoppers	Modern retail shoppers	Transient shoppers	Traditional market shoppers

In the purchase of fresh/chilled meat, store choice behaviour was mainly associated with variables such as freshness (Zikhan et al. 1999; Hsu and Chang 2002; Goldman and Hino 2005), religion and ethnicity (Goldman and Hino 2005; Bonne and Verbeke 2006), a close relationship with vendors (Zikhan et al. 1999; Goldman and Hino 2005) and price (Farhangmehr et al. 2000; Hsu and Chang 2002). Ziehl et al. (2005) segmented the respondents who purchased beef according to their price sensitivity, the importance of production attributes (open-range grazing, no hormone use) and demographics (residing in urban/rural areas, occupation, gender, family size). In this study, respondents were grouped according to their store choice preference.

While consumers preferred to either purchase their fresh/chilled meat from a modern retail outlet or a traditional market, for the purchase of fresh fruit and vegetables, there were a group of consumers who were not loyal to any retail outlet.

Kovacic et al. (2002) identified four clusters where consumers were segmented according to their buying characteristics and their preferred place for purchasing fresh fruit and vegetables. While Kovacic et al. (2002) identified a large segment of

consumers described as “city markets fans”, because city markets were considered the place to meet friends and acquaintances, the findings of this research found that “traditional market shoppers” preferred to purchase their fresh produce from traditional markets because of the opportunity to bargain on price, loyalty to knowledgeable vendors and products that were perceived to be of higher quality. “Practical buyers” preferred more modern retail outlets because of the attractive presentation, product appearance and price (Kovacic et al. 2002). In this study, “modern retail shoppers” preferred to purchase from supermarkets because of the wide variety of fresh food available, the products were clearly priced, longer trading hours and a comfortable environment to shop with children.

12.3.3 The relationship between quality and store choice

Objective 3:
To identify any significant difference in the quality of the fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional market).

In identifying any differences in the quality of the fresh food products sold from either a modern retail outlet or a traditional market, the findings revealed that most respondents from the fresh/chilled meat survey (87.1%) and fresh fruit and vegetable survey (81.9%) agreed that there were differences in quality (Table 12.7).

Table 12.7: The difference in the quality of fresh food between modern retail outlets and traditional markets

		Fresh/chilled meat		Fresh fruit and vegetable	
		N	**%**	**N**	**%**
Do you perceive any differences in the quality of [fresh/chilled meat/fresh fruit and vegetables] between modern retail outlets and traditional markets?	Yes	222	87.1	231	81.9
	No	33	12.9	51	18.1
Total		259	100.0	282	100.0
Which of the two retail outlets offer the best quality of [fresh/chilled meat/fresh fruit and vegetables]?	Modern retail outlets	98	37.8	160	56.7
	Traditional markets	161	62.2	122	43.3
Total		259	100.0	282	100.0

However, when indicating which retail outlet offered the best quality, differences were found between the two surveys. While 62.2% of respondents chose the traditional markets as the preferred retail outlet from which to purchase the best quality fresh/chilled meat, only 43.3% of the respondents from the fresh fruit and vegetable study believed that the traditional market offered the best quality produce.

Freshness and cleanliness were the two variables considered by respondents which best differentiated the quality of the fresh food offered by the alternative retail outlets (Table 12.8).

Table 12.8: Variables respondents consider that the quality of fresh food is better from another retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (97.9%%)	Freshness (78.5%)
Cleanliness (38.7%)	Price (25.2%)
Halal (29.4%)	Cleanliness (21.9%)
Price (21.4)	Display area (17.8%)

The concept of Halal was also among the most frequently cited variables respondents considered in differentiating between the quality of the fresh/chilled meat offered from alternative retail outlets. However, Halal was seldom cited by respondents when they thought about the quality of the fresh fruit and vegetables offered by either a modern retail outlet or traditional market.

In choosing between retail outlets, four variables were common in determining where respondents preferred to shop for their fresh/chilled meat and fresh produce (Table 12.9).

Table 12.9: Respondents level of agreement/disagreement with each of these statements

Fresh/chilled meat	Fresh fruit and vegetables
Products in supermarkets are clearly priced. Its more convenient to shop in supermarkets because I can buy all my groceries at the same time. Chicken and beef are fresher in traditional markets. Consumers can bargain on price in wet markets. Retailers in the traditional market are more knowledgeable about the products they sell. I prefer to buy my fresh meat from the same vendor in the traditional markets. Fresh meat is displayed better in supermarkets. The children feel comfortable when I shop at supermarkets.	Its more convenient to shop in supermarkets because I can buy all my groceries at the same time. Products in the supermarkets are clearly priced. Consumers can bargain on price in wet markets. Fresh produce is displayed better in supermarkets. Supermarkets operate on everyday while traditional markets operate only on certain days of the week.

Three of the common variables were more supportive of modern retail outlets (it's more convenient to shop in supermarkets to buy all my groceries at the same time, products in supermarkets were clearly priced, and fresh food is better displayed in supermarkets). The concept of offering convenience for supermarket patrons were also discussed by Farhangmehr et al. (2001), Shamsudin and Selamat (2005), Abu and Roslin (2008) and Ahmed (2008). The findings of this research correspond with the literature where shoppers who purchase their fresh/chilled meat and fresh fruit and vegetables from a modern retail outlet agreed that the products available from supermarkets and hypermarkets were clearly priced (Hoffmann 2000) and displayed better (Liu et al. 2006; Bougoure and Lee 2009).

The opportunity to bargain on price was the only common variable found to support the traditional retail outlets by respondents from both surveys. Maruyama and Trung (2007), Lui (2008) and Huong (n.d.) found that shoppers who preferred to shop at traditional markets enjoyed the ability to bargain on price. However, dissimilarity occurred between both surveys where respondents in the fresh/chilled meat survey demonstrated how traditional markets were superior than modern retail stores in offering fresh/chilled meat to their customers: meat was perceived to be fresher, and the shopper could buy from trusted and more knowledgeable vendors.

12.3.4 Synthesising the findings of fresh/chilled meat and fresh fruit and vegetables

The findings discussed in this section address Objectives Four, Five, Six and Seven.

Objective 4:
4a. To gain an understanding of the quality cues that consumers look for in purchasing fresh/chilled meat and fresh fruit and vegetables.
4b. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables.

The fourth objective in this research study was to identify the quality cues utilised by consumers in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail outlet (Table 12.10).

Table 12.10: Variables respondents consider in their decision to purchase fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	Fresh fruit and vegetables
Freshness	Freshness
Halal	Cleanliness
Cleanliness	Price
Price	Country-of-origin

Freshness was found to be the most frequently cited variable considered by respondents when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. For fresh/chilled meat, freshness was described by the product appearance such as colour of the meat (McCarthy and O'Reilley 1999; Kennedy et al. 2004) or skin colour (Beharrell and MacFie 1991; Ragaert et al. 2004). For fresh fruit and vegetables, the texture (Batt 2004), size (Berdegue et al. 2003; Batt 2004) and shape (Novotorova and Mazzocco 2008; Batt 2009) were used as surrogate variables to describe freshness. The findings revealed that consumers utilised these intrinsic quality cues as search attributes in their decision to purchase. According to Brunso et al. (2002), although consumers with less experience may rely on intrinsic cues, Bech et al. (2000) and Ragaert et al. (2004) demonstrate that intrinsic cues are important indicators of food quality once consumers have experienced the product.

The next most frequently cited attribute by respondents differed between the two types of product: Halal for the purchase of fresh/chilled meat and cleanliness for the purchase of fresh produce. According to the Department of Standards Malaysia Halal (2004) and Bonne and Verbeke (2006), the concept of Halal does not only cover the method of slaughtering the animal, but includes respect for the animal, as well as the preparation, processing, packaging, storing and transportation, all of which highlight the importance of food safety. Given that a consumer cannot generally determine the Halal status of meat at the time of purchase, Halal is described as a credence quality attribute (Bonne and Verbeke 2008a). In determining the Halal status of the meat, it is expected that consumers will utilise other quality cues such as the label/Halal certificate where one is present (extrinsic cues) or trust in their preferred butcher in the traditional market.

Cleanliness was related to the physical appearance of the product and was considered particularly important in the decision to purchase fresh potatoes and spinach. Cleanliness of the produce indicated that consumers preferred to purchase product that was washed (Batt 2009) and free from soil (Fernqvist and Ekelund 2009).

Although cleanliness was the third most frequently cited variable considered by respondents in the fresh/chilled meat survey, the meaning of cleanliness was different to that discussed in the purchasing of fresh fruit and vegetables. For fresh meat, cleanliness was related to the clean environment and hygiene offered by retailers. Most supermarkets and hypermarkets display the fresh/chilled meat they offer for sale in clean refrigerated storage units. Furthermore, the clean atmosphere offered by most modern retail outlets enhanced consumers' level of confidence in terms of the safety of the meat. Conversely, many respondents were concerned about the lack of cleanliness in most traditional markets which were described as dirty, smelly and crowded, concurring with the previous findings of Goldman et al. (1999) and Hsu and Chang (2002). Without proper handling, such as unclean hands and unwashed equipment, fresh meat products may be easily contaminated and thus present a significant health risk to buyers. Although the majority of respondents (94.0%) agreed that supermarkets were cleaner than the traditional markets, Ahmed (2008) revealed that only 4.0% of respondents purchased their fresh meat from

supermarkets. Other factors such as Halal was found to be more influential than cleanliness in the respondents' decision to purchase fresh/chilled meat from a retail store.

Price was the third most frequently cited variable respondents considered in their decision to purchase fresh fruit and vegetables. As for the purchase of fresh/chilled meat, price was the fourth most frequently cited variable. In previous discussions, it has been suggested that the purchase of fresh/chilled meat requires a higher level of involvement, compared to the purchase of fresh fruit and vegetables. Given that fresh meat is relatively more expensive than fresh fruit and vegetables, consumers are giving more attention to characteristics other than price in their decision to purchase. Yeung and Morris (2001) demonstrated how consumers viewed a higher price as indicative of a premium quality product and lower prices/special offers as lower quality meat. However, West et al. (2001), who summarised the findings of Beharrell and Denison (1991), Hui et al. (1995) and Piedra et al. (1995), suggested that price was a weak factor in the decision to purchase meat compared to other factors such as freshness and appearance.

Consumer substitution among meat products occurs when consumers show their concerns about the prices of meat in the market. Jung and Koo (2000) found a substitute relationship between fish and meat products, which indicate that fish consumption in Korea would increase when the price of meat products increased. Brester et al. (2004) found that the demand for poultry meat increases as consumers substitute away from relatively more expensive beef products. In Malaysia, when the price of high quality beef was found to be too costly, Tey et al. (2008a) revealed that consumers tend to substitute other meat products or seek lower quality beef as a substitute.

As a result of high imports of fresh produce from countries such as China, India, Indonesia and Australia (Rahim 2007), country-of-origin was the fourth most frequently cited variable by respondents in their decision to purchase fresh fruit and vegetables from a retail store. The cultivation of fresh produce from China is often associated with the excessive usage of chemicals, which may give rise to food safety concerns by consumers. For instance, Greenpeace reported that from a

sample of 45 of the most commonly eaten fresh fruit and vegetables, 40 contained pesticides deemed by the World Health Organisation as being extremely toxic (Greenpeace finds pesticide residues in Chinese fruit and veg 2009). As a result, consumers may prefer not to purchase fruit and vegetables imported from China.

Respondents were then presented with several criteria which were thought to be most influential in the consumers' decision to purchase fresh/chilled meat and/or fresh fruit and vegetables from a retail store. Four themes were identified to be of equal importance to respondents in their decision to purchase fresh/chilled meat (Table 12.11).

Table 12.11: Importance of variables influencing respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	Fresh fruit and vegetables
Halal	The physical appearance of the crop
The physical appearance of the meat	The safety of the crop
Extrinsic indicators	Value for money
The safety of the meat	

Conversely, only three themes were found to influence the purchase of fresh fruit and vegetables. The main difference between the two fresh food groups was the importance respondents attached to Halal in making their decision to purchase fresh/chilled meat compared to the purchase of fresh produce.

Two variables were found to be similar in describing the physical appearance of both fresh food products: freshness and colour. These findings concur with the literature where Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006) and Liu et al. (2006) identified the importance of freshness and colour in purchasing fresh/chilled meat, Batt (2004), McKinna et al. (2007) and Yiridoe et al. (2005) identified freshness and colour as important criteria in the consumers' decision to purchase fresh fruit and vegetables. Other variables which collectively explain the physical appearance of the product were found to be different according to each food category: smell/odour and clean/no flies applied to the purchase of fresh/chilled meat, while firmness and freedom from pests and diseases applied to the purchase of fresh fruit and vegetables. Additional variables were also found to

describe the physical appearance for each type of horticultural product: freedom from sprouting and tuber size for potatoes; freedom from wilting, good leaves and freedom from blemishes and bruises for spinach, and freedom from blemishes and bruises and size/shape for apples.

The importance of food safety was similar for both types of food products where respondents emphasised the absence of chemicals in animal production (freedom from growth promotants) and crop cultivation (freedom from chemical residues). Batt et al. (2006) indicated that if food was to be considered safe, it was necessary to reduce chemical contamination. Zulkifly et al. (2008) confirmed that food safety was being given much greater attention by consumers in Malaysia. Hadi et al. (2010) found that food safety attributes, which involved less usage of insecticides and pesticides in the production of vegetables, was preferred by Malaysian consumers.

The next theme which was of equal importance to the previous themes was comprised of a number of extrinsic cues, where a quality assurance label, competitive price and value for money were considered important in the decision to purchase fresh/chilled meat and value for money in purchasing fresh fruit and vegetables. A quality assurance label was important in the purchase of fresh/chilled meat as it provided a considerable amount of information (health, nutrition and safety) (Sepulveda et al. 2008). Bonne and Verbeke (2006) consider a quality assurance label to be an excellent extrinsic indicator of food quality attributes such as food safety, Halal, health and nutrition. In the absence of any label, the evaluation of these credence attributes is usually based on trust. Given that the behaviour of consumers is changing, with more shoppers starting to purchase fresh/chilled meat from supermarkets, quality signals such as labels and brand names will begin to play a role for consumers in this segment of the market (Bonne and Verbeke 2006; Krystallis and Arvanitoyannis 2006). However, Sepulveda et al. (2008) demonstrated that quality-labelled meat was generally more expensive than non-labelled meat because quality-labelled meat had undergone more controls, which by necessity incurs higher costs.

The findings of this study revealed differences in the factors influencing the respondents' decision to purchase fresh potatoes, spinach and apples (Table 12.12). However, the four factors influencing the respondents' decision to purchase fresh/chilled meat were similar for the purchase of fresh/chilled chicken and fresh/chilled beef.

The most important factors in the respondents' decision to purchase fresh/chilled meat was a Halal label and certification to guarantee the Halal status of the fresh/chilled meat they purchased and the physical appearance of the meat.

The physical attributes of the meat (smell, cleanliness and flesh colour) were found to be equally important to the concept of Halal in the respondents' decision to purchase fresh/chilled beef and chicken from a retail store. Similar studies have described the importance of such intrinsic attributes as fat content and colour (Resurreccion 2003); cut, colour, marbling, fat content and fat rim (de Carlos et al. 2005); and freshness, leanness and bright colour (Krystallis and Arvanitoyannis 2006).

Table 12.12: Factors influencing respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	**Fresh fruit and vegetables**		
	Potatoes	**Spinach**	**Apples**
Halal and the physical appearance of the meat	The physical appearance of the crop, value and usage	Quality	Integrity
Price and value	Prior experience	Safe	Value and the physical appearance of the crop
Poultry/cattle production	Promotion	Convenience	Origin
			Promotion

Similar to the purchase of fresh/chilled meat, the most important factor which influenced respondents' decision to purchase fresh potatoes and spinach revolved around the physical attributes of the two crops. However, different variables were found to describe the physical appearance of potatoes (tuber shape, freedom from sprouting, size and flesh colour) and spinach (freshness, free from wilting and good

leaves). In the case of fresh potatoes, the findings of this study concur with Jemison et al. (2008), where consumers in the USA emphasised the physical characteristics of the potatoes (skin colour and size). The findings of this study were also compared with Batt (2009), where Australian consumers highlighted the importance of freedom from pests and diseases, no sprouts, freshness and firmness in their decision to purchase fresh potatoes from a retail store. As the price of potatoes (RM3.00/kg to RM4.00/kg – depending on the origin of the potatoes) in the market is more expensive than spinach (RM2.00 to RM2.50 per bunch) and apples (RM0.50 to RM1.00 – depending on size) (*Laporan harga purata peringkat komoditi harian pada Khamis, 3 Jun* 2010), respondents were found to rank value and the usage of potatoes as the most important factor in their decision to purchase.

In the case of spinach, the findings of this study concur with Slosser (2006), who suggested that the quality and visual appearance of spinach was important when making the decision to purchase fresh spinach. However, in purchasing apples, given that the majority of apples in Malaysia are imported from China and chemicals are extensively used in their production (Zeitner 2006), this may have led respondents to consider integrity (freedom from chemicals and freedom from pests and diseases) as the most important factor which influenced their decision to purchase fresh apples from a retail store.

Price and value were considered to be the second most important factor influencing the respondents' decision to purchase fresh/chilled meat. In the Klang Valley region, the price of chicken is much cheaper (RM7.00 to RM7.50 per kg) compared to the price of beef (RM20.00 per kg) (*Laporan harga purata peringkat komoditi harian pada Khamis, 3 Jun* 2010). As a result of this, consumers may purchase and consume more chicken compared to beef. The price of both types of fresh/chilled meat is highly variable and changes according to the festive seasons. Given that the price of beef is considerably more expensive, the consumption of beef in Malaysia is limited to festive or special occasions. Verbeke and Viaene (1999) confirmed that consumers in Belgium also perceive beef as the meat for special occasions. Similarly, McIlveen and Buchanan (2001) found that respondents purchased beef for special occasions. However, in purchasing meat for a special occasion, they were more likely to purchase from a butcher rather than a supermarket. Kasa (2003)

also mentioned that beef consumption in countries in North East Asia is traditionally associated with special occasions. In Korea for instance, the consumption of *Hanwoo* beef is related to a special religious festive. For the Muslim community, the consumption of beef is popular during the celebration of Eid-al-Fitr (Gipson 1999). Given that the consumption of these two fresh meat products are high, particularly chicken meat (Malaysia Poultry and Products Annual 2006), this may explain why price and value are considered so important in the respondents' decision to purchase fresh/chilled meat.

The second most important factor considered by respondents as influencing their decision to purchase fresh fruit and vegetables was different from fresh/chilled meat and different for each crop. For potatoes, respondents ranked the importance of prior experience as the second most important factor which influenced their purchase. The findings of this study revealed that respondents used variables such as the origin of potatoes (country-of-origin and locally grown), organic, favourable prior purchase and variety when purchasing fresh potatoes from a retail store. In a similar study, Nalley et al. (2004) demonstrated how consumers use the origin of sweet potatoes before evaluating the taste (experience attributes). Batt (2004) revealed how consumers anticipated that by purchasing potatoes with yellow skin and yellow flesh, the tubers would cook well and taste good.

In the case of spinach, respondents emphasised the importance of safety (organic, size, favourable prior purchase and locally grown) as the second most important factor to influence their purchase. Here the results indicated that respondents were more concerned about the cultivation method of spinach in their decision to purchase. On the other hand, good value (value for money and competitive price) and the physical attributes of apples (skin colour and size/shape) were ranked as the second most important factor in the respondents' decision to purchase fresh apples.

The study results demonstrate that respondents were less concerned about methods of poultry and cattle production in their decision to purchase fresh/chilled meat. While several other studies have suggested that production and ethical matters were seldom considered by consumers when purchasing fresh/chilled meat (McEachern and Schroder 2002; Idrus [cited in Azhari 2010]), given that Halal includes

guidelines on animal welfare, this may explain why animal welfare did not emerge as a single variable.

In the case of fresh produce, although a factor on how the crops were cultivated did not emerge on its own, implicitly, respondents have shown their concerns about the cultivation methods employed to produce the fresh produce they consume by considering freedom from chemical residues, organics and the origin of the crop.

Promotional items were the least important factor considered by respondents in their decision to purchase fresh potatoes and apples. These findings concur with Batt (2009), who revealed how promotional variables such as newspaper advertising/catalogues, advice from sales assistants, the availability of product information in-store and label/brand had the least impact on Australian consumers in their decision to purchase fresh potatoes from a retail store.

In-store tastings were also found to have little influence on the respondents' decision to purchase fresh apples. However, these findings conflict with Ricks et al. (2002), who suggested that 95.0% of the consumers who were involved in in-store sampling would consider purchasing apples. In-store tastings are considered to be important as: (1) it enables consumers to try new varieties of apples in the market, and (2) it collects feedback from consumers which can be later utilised by marketers to develop new promotional material. Unlike potatoes and apples, it is unusual to find spinach being promoted in either newspapers or catalogues. This may explain why promotion did not emerge as one of the factors influencing the consumers' decision to purchase fresh spinach from a retail store.

Convenience (spinach is pre-packed and tied in bunches) was found to be the least important factor influencing the consumers' decision to purchase spinach. This may be due to the fact that consumers prefer to self-select their fruit and vegetables rather than purchasing products that are already packed. Similarly, van der Pol and Ryan (1996) found that although it was more convenient to purchase pre-packed vegetables, most consumers preferred to self-select the vegetables they intended to purchase. The main reason was quality control. However, the concept of convenience in the purchase of spinach is more likely to be associated with the

practicality of handling the product. Anecdotal evidence suggests that in purchasing fresh spinach, self-selecting may not represent convenience, as the consumers would have to select each plant individually, which would result in considerably more time and effort. Furthermore, in the purchase of spinach, consumers do not have much choice given that this vegetable is already tied in bunches when sold to the retail outlets. Retailers would also like to avoid the loss from damaged vegetables caused by consumers self- selecting individual pieces. Mergenthaler et al. (2009) examined the convenience attributes of vegetables from the perspective of semi-processed products (washed, peeled and packed), which reduce the amount of time in preparing vegetables at home.

Objective 5:
5a. To understand the relationship between perceived quality cues and quality attributes.
5b. To identify the relative importance of the quality cues on the desired quality attributes.

The fifth research objective was to identify the relationship between perceived quality cues and quality attributes in the respondents' decision to purchase fresh food. In associating the variables and different sets of desired values, the findings revealed similarities between both fresh/chilled meat and fresh fruit and vegetables. Freshness and the physical appearance of the product were among the variables most frequently cited by respondents in relation to good taste and good texture (Table 12.13).

Table 12.13: Group of variables respondents relate with good taste and good texture/mouth feel

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food has a good taste.	Freshness The physical appearance of the meat	Freshness The physical appearance of the crops
The food has good texture/mouth feel.	Freshness The physical appearance of the meat	Freshness The physical appearance of the crops

Not unexpectedly, the main difference between fresh/chilled meat and fresh fruit and vegetable respondents were the physical attributes of the product. While the physical appearance of meat was described by colour, smell/odour and clean/no

flies, the physical appearance of fresh produce was determined by the firmness and colour of the product. Taste and good texture/mouth feel was associated with the smell/odour of the meat, which concurred with Egan et al. (2001) and Liu et al. (2006). However, Carpenter et al. (2001) demonstrated that consumers' preferences towards the colour of beef (red, purple, brown), while it was influential in their decision to purchase, had little effect on the eating satisfaction or the taste of the meat. According to Carpenter et al. (2001), no matter what colour the meat is (red for fresh beef, brown for discounted beef or purple for vacuum packaged beef), consumer eating satisfaction was determined by other quality attributes such as tenderness, juiciness and flavour. Respondents often make the association that a clean store and the appearance of clean meat will influence the taste and texture/mouth feel. Although consumers associate cleanliness and the absence of flies with food that has a good taste and good texture/mouth feel, it is more likely that any association is more related to food safety. Mitchell (1998) noted that a dirty store might suggest an unhygienic environment.

Fat content and leanness were additional variables cited by respondents which led them to believe that the fresh/chilled meat they purchased had a good texture and mouth feel. Bonne and Verbeke (2006) demonstrated that older respondents emphasised the importance of purchasing meat which contained less fat as it was easier to chew when consuming the product. Bonne and Verbeke (2006) also revealed how some respondents relate leanness and tenderness to more tasty meat.

For fresh fruit and vegetables, freshness, firmness and colour were variables cited by respondents which they believed were related to good taste and good texture/mouth feel. As suggested by Yiridoe et al. (2005), freshness leds to a unique taste for fruit and vegetables. For apples, Harker (2001) mentioned that the firmness of the fruit (crisp, tough and soft) related to the mouth feel properties (mealy, floury and webby), taste (sweetness, acidity and astringency) and juiciness. Harker (2001) also demonstrated how some consumers have preferences for sweet hard apples, while others prefer softer apples. Daillant-Spinnler (1996) confirmed the association between the colour of apples and sensory characteristics such as taste and flavour.

Depending on the crops, additional variables were also used to describe the physical appearance of the crops that may lead to good taste and good texture. However, cleanliness was not associated with good taste or good texture in the respondents' decision to purchase fresh fruit and vegetables.

In their attempt to ascertain that the food was safe to eat, respondents placed considerable importance on the freedom from chemical residues for both fresh/chilled meat and the fresh fruit and vegetables they purchased from a retail store (Table 12.14).

Table 12.14: Group of variables respondents relate with food safety

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food is safe to eat.	Freedom from chemicals/growth promotants Appropriately slaughtered (Halal) Freedom from antibiotics Halal certificate Clean/no flies	Freedom from chemical residues Freedom from pests and diseases

Other variables considered by respondents to determine the safety of the fresh/chilled meat purchased revolved around Halal (appropriately slaughtered and certificate), freedom from antibiotics and growth promotants and microbial safety (clean/no flies). Respondents were generally more concerned about chemical safety rather than microbial safety in determining that the meat they had purchased was safe to consume. According to Krystallis and Arvanitoyannis (2006), although microbial contaminants such as Salmonella, BSE and E/coli are much more of a health threat compared to hormones and antibiotics, most consumers recognised that the risk of microbiological contamination could be minimised, given that meat was cooked before consumption (Yeung and Morris 2006). While cooking would eliminate pathogens, chemical residues, growth promotants and hormones would remain.

With regard to the purchase of fresh produce, respondents were found to be much less concerned about microbial contamination. This may due to the fact that

consumers commonly understood that washing and peeling fruit and vegetables reduced their exposure to pesticides (Mehta 2003). However, Brackett (2004) indicated that when washing fresh produce, even if antimicrobial agents were added to the water, it would not completely eliminate pathogens from the surface of fruit and vegetables. Heaton and Jones (2008) demonstrated how consumers may be potentially exposed to a number of pathogens when consuming fresh produce such as lettuce, spinach and tomatoes. Contamination may occur at harvest, during storage and via the irrigation water. Heaton and Jones (2008) suggested the use of sanitisers (chlorine-based products) and various other chemicals to minimise the risk of contamination, but the use of chemicals in fruit and vegetable production will elevate consumers' concerns about food safety.

In purchasing fresh fruit and vegetables, the variables respondents believed would lead to safe food were found to be inconsistent. While respondents wanted less chemicals to be used in crop production, at the same time, they preferred fresh produce that was free from pests and diseases. Wilson and Tisdell (2001) demonstrated that the usage of pesticides has been very effective in reducing pest and disease infestations and postharvest spoilage. According to Baker (1999), the level of damage on fruits was an important indicator in determining the availability of fresh produce in the market. As a result of this, Baker (1999) indicated that most apples available in retail stores are free from insect damage. Consumers may perceive that damage from pests and diseases indicates that the produce is unfit for consumption. Nevertheless, consumers who are more concerned about food safety were less concerned about the level of damage on the fruit and vegetables they purchased. Baker (1999) revealed that for those consumers who were primarily concerned about the usage of chemical residues, the level of fruit damage by pests was relatively unimportant in their decision to purchase apples. Similarly, Dinham (2003) found that there were consumers who deliberately chose vegetables showing signs of pest attack because they perceived that the produce had lower pesticide residues and was safer to eat.

The concept of Halal (appropriately slaughtered and Halal certificate) were variables which ensured food safety in the purchase of fresh/chilled meat, but were not cited in the purchase of fresh fruit and vegetables. Bonne and Verbeke (2006)

and Talib et al. (2008) reported that meat which had been appropriately slaughtered according to Islamic rules could guarantee that the food was hygienic and safe to eat because it contained less blood, which reduced the risk of bacterial contamination. However, given that the method of slaughter which determines the Halal status of the product is a credence quality attribute (Bonne and Verbeke 2006), consumers require some instrument to verify that the fresh/chilled meat they are about to purchase is Halal. In order to support this requirement, respondents often associated a Halal certificate with their desire to reassure themselves that the fresh/chilled meat they were about to purchase was safe to eat.

Respondents from both surveys considered a number of credence quality attributes which directed them to believe that the fresh/chilled meat and fresh fruit and vegetables they had purchased were safe to eat. However, without the presence of an extrinsic cue such as a label or a certificate, it is difficult for consumers to verify that the food is safe to eat. For this reason, a certificate or quality label is often attached to the product to demonstrate that it meets some prescribed food safety and food quality standards (Botonaki et al. 2006). Nevertheless, Botonaki et al. (2006) suggested that the level of consumers' awareness and knowledge of certified fruit and vegetables in Greece was still relatively low because the availability of certified fresh produce was still limited and there was inadequate promotion with regards to certified produce in the market.

Similar variables such as freshness, freedom from chemicals and organic were associated with the purchase of fresh/chilled meat and fresh fruit and vegetables that were perceived to be healthy and nutritious (Table 12.15).

Table 12.15: Group of variables respondents relate with health and nutrition

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food is healthy and nutritious.	Freshness Freedom from chemicals/growth promotants Organically grown Clean/no flies Leanness and fat content	Freshness Freedom from chemical residues Organic

Kennedy et al. (2004) confirm that freshness of meat is an indicator of healthfulness. Oakes and Slotterback (2002) demonstrated that North Americans utilised the appearance of the meat (freshness and fat content) to indicate that the meat was healthy and nutritious. Bonne and Verbeke (2006) suggested that leanness of the meat was an indicator of healthy and nutritious food, given that the consumption of lean meat was perceived to reduce cholesterol and to maintain bodyweight. Killinger et al. (2004) identified two different segments of consumers: (1) those who had a preference for high marbled meat because of the superior eating quality (taste), and (2) those who had a preference for low marbled meat because they were more concerned with the fat content (health). Krystallis and Arvanitoyannis (2006) reported that female consumers who were health conscious were more oriented towards the consumption of lean meat.

Freshness of fruit and vegetables was frequently mentioned as a quality indicator, which suggested that the produce was healthy and nutritious. Shewfelt (2006) suggested that more sophisticated consumers demanded high quality fresh fruit and vegetables to support their active and healthy lifestyles.

Organic and other sustainable methods of cultivation were additional quality attributes which were believed to indicate that fresh fruit and vegetables were more healthy and nutritious than conventionally produced fruit and vegetables. Consumers' believe organically produced fruit and vegetables to: (1) have more vitamins and minerals (Roddy et al. 1996; Worthington 2001); (2) to taste better (Roddy et al. 1996; Wandel and Bugge 1997), and (3) to be more natural and more healthy (Lea and Worsley 2005; Botonaki et al. 2006; Yiridoe et al. 2005). The use of chemicals in producing apples (either through conventional pesticide use, reduced pesticide use or very limited pesticide use) has been discussed by Baker (1999), who links the risks of cancer to the consumers' health.

Similar variables which described the production process (freedom from chemicals/growth promotants and organically produced) were also indicators that the fresh/chilled meat purchased was healthy and nutritious. Harper and Makatouni (2002) demonstrated how consumers were concerned with the production method (content of feed, the use of veterinary medicines and free range method of farming)

for the meat they purchased from a retail store. Harper and Makatouni (2002) emphasised that “healthy and happy animals produce healthy products”.

Competitive price, value for money, freshness, size and intended use were associated with food that was perceived to represent good value for money (Table 12.16).

Table 12.16: Group of variables respondents relate with value for money

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food represents value for money.	Competitive price Value for money Freshness Size Intended use	Competitive price Value for money Freshness Size Intended use

Price was the most frequently cited variable associated with the purchase of both fresh/chilled meat and fresh fruit and vegetables that were believed to deliver good value for money. Comparing between the two groups of products, clearly, the per kg price for fresh fruit and vegetables is much lower than the price for fresh/chilled meat. Therefore, it is important to get value for money for the fresh/chilled meat purchased. Consumers may therefore spend more time in making their decision to purchase fresh/chilled meat from a retail store compared to fresh fruit and vegetables. As indicated by McCarthy and O’Reilly (1999), value for money is achieved through utilising quality attributes such as freshness, size and shape of the meat. For instance, Egan et al. (2001) found that consumers preferred medium to large size steaks. If the piece of steak is small, after cooking, the meat may shrink and dry which will not represent good value for money. In the Malaysian context, the type of cooking or the intended use generally determines which cuts of meat are preferred, given that not all cuts will deliver the same satisfaction. Therefore, the findings of this study reveal that the attributes respondents utilised (size and intended use) revolve around minimising risk and wastage which signified food that brought better value for money.

Batt (2004) demonstrated the relationship between fruit size, intended use and value for money for the purchase of apples. For instance, there is a demand for smaller

sized apples to be consumed by children as snacks at school. For the larger sizes, although parents may cut the fruit into smaller pieces for the children, Batt (2004) found that it did not represent good value for money because children refused to eat the discoloured fruit. As for potatoes, Pavlista (1997) demonstrated the importance of choosing the correct type of potatoes according to the intended use. According to Pavlista (1997), given that red potatoes are naturally high in glucose and have a low dry matter content, these potatoes boiled very well and were very suitable for making potato salad. Conversely, the russet varieties were preferred for making fries due to the low sugar content and medium specific gravity which gives the fries the desired mealy texture. Consumers may not gain the benefit of the purchase (value for money) if they use the wrong type of potato in their cooking.

Respondents associated a similar group of variables around the production systems (organic, freedom from chemicals/growth promotants, freedom from chemical residues) for fresh/chilled meat and fresh fruit and vegetables that had been produced in a way that protected the environment and worker welfare (Table 12.17).

Table 12.17: Group of variables respondents relate with food that has been produced in a way that is good for the environment and protects worker welfare

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food has been produced in a way that is good for the environment.	Organically grown Freedom from chemicals/growth promotants Freedom from antibiotics	Organic Freedom from chemical residues Freedom from pests and diseases
The food has been produced in a way that protects worker welfare.	Grown on local farms Raised in a humane way Freedom from chemicals/growth promotants	Freedom from chemical residues Organic Locally grown

Kumm (2002) demonstrated how livestock produced under organic production systems were more sustainable. Under organic meat production systems, animals were: (1) fed with fodder that was grown without artificial fertilisers and chemical pesticides; (2) nurtured in a more natural environment (free grazing and not kept all the time in shelters) and (3) manure from animals was managed appropriately (not

dumped into water sources that may cause other health problems) and reused to provide plant nutrients in fodder production. McEachern and Willock (2004) reported that farmers in the UK were being encouraged to convert from conventional farming to organic farming to protect the environment. Besides concerns about health, Grunert et al. (2004) suggested that consumers associate organic meat production with concern for the environment and animal welfare.

The association between organically produced product, freedom from chemical residues and concern for the environment was demonstrated by Yiridoe et al. (2005), where younger consumers preferred to purchase organic products because they were chemical-free and environmentally-friendly. The National Institute for Occupational Safety and Health [cited in Hanson et al. 2004] reported that in the US, pesticide poisoning occurred among approximately 3,380,000 agricultural workers each year. Pimentel and Greiner (1997) [cited in Wilson and Tisdell 2001] mentioned that the continuous use of pesticides in agriculture production damaged agricultural sustainability, the environment and could even cause ill-health to farmers, those living near farms and consumers of food products. Wilson and Tisdell (2001) made a comparison between farmers from developed countries and developing countries, claiming that farmers from developing countries were more exposed to direct contact with pesticides, given that they use hand sprayers compared to farmers in the developed countries who apply pesticides from a closed environment (pesticides sprayed from an aircraft or a tractor). Furthermore, with fewer regulations that require farmers in the developing countries to use the appropriate protective gear when handling pesticides, such equipment was poorly maintained, while others often did not wear the gear at all. The World Resources Institute (1998) [cited in Wilson and Tisdell 2001] reported that the lack of proper storage facilities for the chemicals, poor living conditions and water supplies contaminated with pesticides adversely affected the health of farmers and their families. Despite the negative affects arising from the use of chemicals, Hanson et al. (2004) stated that chronic illness resulting from pesticide exposure among agricultural workers was not well documented.

Respondents related origin and the means by which animals were raised as signals that were perceived to protect worker welfare. Trent et al. (2003) described the

conditions of abattoirs in some developing countries as offering poor sanitation, poor veterinary care, and inadequate safety equipment, which may expose workers to injury at work and place them in an unsafe working environment. Slaughter houses in Malaysia are supervised by the Department of Islamic Development Malaysia (JAKIM) (*Garis panduan pengeluar produk, premis makanan dan loji penyembelihan* 2007) which requires them to follow these regulations: (1) workers who are in charge of the slaughter must obtain an official licence certified from JAKIM; (2) the abattoir must hold a certificate from the Department of Veterinary Services Malaysia; (3) the abattoir must be clean and (4) the slaughter, handling, storage and transport process must adhere to the rules prescribed in MS1500:2004. According to Trent et al. (2003), the introduction of modern systems and equipment in abattoirs, together with more humane transport, handling and slaughtering practices, will not only improve animal welfare, but also improve the safety of the workers involved. According to Sarif (2009), in order for a farm in Malaysia to be accredited to the Livestock Farm Accreditation Scheme (SALT), the farm is evaluated on various aspects including: (1) the adoption of Good Animal Husbandry Practices (GAHP) to ensure the health and welfare of the animal; (2) to operate in a sustainable manner; (3) to ensure workers welfare and safety; and, (4) produce products that are safe for human consumption. Recently, Shahroni (2010) reported that a total of 14 slaughter houses had been shut down due to their failure to conform to the quality standards that had been established. Respondents who were aware of the slaughtering process and how animals were raised locally, choose to associate these variables with the well-being of the workers involved.

To ensure that the fresh/chilled meat purchased was guaranteed Halal, respondents associated Halal with variables such as an Halal certificate, appropriate slaughter and quality assurance label (Table 12.18). This group of variables was not associated with the purchase of fresh fruit and vegetables.

Table 12.18: Group of variables respondents relate with Halal

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food is guaranteed Halal.	Halal certificate Appropriately slaughtered Quality assurance label Country-of-origin Label/brand	Locally grown Label/brand Country-of-origin

A group of variables which indicated the origin and label/brand name for fresh/chilled meat and fresh fruit and vegetables was associated with the Halal status of the food. In the purchase of fresh/chilled meat, respondents were concerned about the origin of the meat as a result of Malaysian imports of fresh/chilled meat from countries such as Australia, Latin America and the US, where Islam is a minority religion (Chong 2010). Riaz and Chaudry (2004) state that since 1982, it has been mandatory for all imported meat, which includes beef, poultry, mutton and veal, to be Halal certified by JAKIM. Slaughter houses producing meat and poultry products overseas must be inspected, evaluated and approved by both JAKIM and the Department of Veterinary Services. The USDA reported that all poultry shipments imported from the US to Malaysia are accompanied by an import licence, veterinary health certificate, meat inspection certificate and Halal certificate (Malaysia Poultry and Products Annual Overview 2005). Furthermore, all poultry meat must be labelled with the registered number of the abattoir and packing plant, lot number, date of production and slaughter. According to the Meat Trade News Daily, Malaysia blocked the import of meat from New Zealand from 2005 to 2007 over claims that the animals had been electrically stunned prior to slaughter (New Zealand - Halal meat ban could cripple sheep industry 2009).

Labelling the product as Halal also conveys information that the food is safe and permitted to be eaten. However, with the presence of many Halal labels and certificates issued by private organisations, Bernama (2010) reports that consumers are often cheated by food producers or manufacturers who want to add value to the product by capturing the Muslim market without seeking formal accreditation (Ariff 2010). As a result, JAKIM has recently banned the use of all other Halal labels and certificates in the Malaysian food industry (Hussain 2010).

A Halal label or certificate is not necessary for fresh produce given that the product is naturally Halal. However, similar to the purchase of fresh/chilled meat, respondents have associated variables such as origin and labels to guarantees that the fresh fruit and vegetables purchased are Halal. New Zealand Trade and Enterprise report that Malaysia is still dependant on imported fruit and vegetables (Malaysia still dependant on imported fruit, vegetables 2010). Warr et al. (2008) mentioned that Malaysia imported fruit and vegetables from countries such as China, India, Thailand, Indonesia, Australia and New Zealand. According to the Malaysian Agriculture and Agro-based Industry Minister, imported fresh fruit and vegetables must conform to grading, packaging and labelling guidelines, and meet the required standard of the Federal Agriculture Marketing Authority (FAMA) and the Malaysian Agriculture Quarantine Inspection Services (Malaysia to enforce grading system for fruit/vegetables 2008). The Minister for the Malaysian Agriculture and Agro-based Industry mentioned that Malaysia often encounters problems associated with the quality and safety of imported fresh produce from Thailand and Indonesia, but not with produce imported from developed countries such as Australia or Europe (Malaysia to enforce grading system for fruit/vegetables 2008).

The key findings from this section reveal that a number of variables were used by respondents in both surveys to evaluate a multiple number of desired values. Freshness, for both fresh/chilled meat and fresh fruit and vegetables, indicates that the food will taste good, have a good texture/mouth feel, be healthy and nutritious and deliver value for money (Table 12.19).

Table 12.19: Variable respondents relate with a number of desired outcomes

Variables	Desired outcomes
Freshness	The food has a good taste. The food has good texture/mouth feel. The food is healthy and nutritious. The food represents value for money.

Respondents also associated fresh food that was free from chemical residues and/or growth promotants as an indicator of food that was safe to eat, healthy and

nutritious and had been produced in a manner that was not harmful for the environment or worker welfare (Table 12.20).

Table 12.20: Variable respondents relate with a number of desired outcomes

Variables	Desired outcomes
Freedom from chemical residues/growth promotants	The food is safe to eat. The food is healthy and nutritious. The food has been produced in a way that is good for the environment. The food has been produced in a way that protects worker welfare.

Respondents have also related freshness and freedom from chemical residues/growth promotants as an indicator that the food is healthy and nutritious to eat. However, other variables were utilised in determining that the food was Halal (appropriately slaughtered and Halal certificate).

Objective 6: To identify any significant difference in the importance of the quality attributes consumers desire in purchasing fresh/chilled meat and fresh fruit and vegetables.

The sixth research objective sought to identify any significant differences in the importance attached to the quality attributes when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. Three desired values (Halal, food safety and food that is healthy and nutritious) were similarly ranked by respondents in their decision to purchase both types of food products (Table 12.21).

Table 12.21: Importance of criteria respondents use in their decision to purchase fresh/chilled meat and fresh fruit and vegetables in a retail store

Fresh/chilled meat	Fresh fruit and vegetables
The food is guaranteed Halal. The food is safe to eat. The food is healthy and nutritious.	The food is safe to eat. The food is healthy and nutritious. The food is guaranteed Halal. The food has a good taste. The food has good texture/mouth feel.

In the respondents' decision to purchase fresh fruit and vegetables, two additional criteria which described good taste and good texture were equally important to food that was considered safe, healthy, nutritious and guaranteed Halal. The importance

of ethical issues such as concern for the environment and worker welfare were largely irrelevant in the respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. Othman (2000) reported similar findings, which demonstrated that Malaysian consumers placed more importance on quality, price and brand rather than concern for the environment in their purchasing decisions. Said et al. (2003) found that the level of environmental knowledge and awareness among Malaysian consumers was relatively high. Nevertheless, consumers' level of practice and responsibility towards caring for the environment do not align with the current level of concern for the environment. For instance, Said et al. (2003) reported that waste has been identified as one of the environmental priorities for Malaysia. Conversely, practices such as reuse and recycling were reported to be very low among consumers. Environmental awareness campaigns are still being implemented to encourage consumers to care for the environment. Hypermarkets such as Tesco show their support for the governments "No Plastic Bag Day" campaign by introducing the Green Club card initiative (Menon and Bhatt 2010). Under this program, shoppers are rewarded with extra shopping points if they bring their own shopping bags when purchasing from Tesco. Conversely, shoppers who continue to use plastic bags to pack their goods will be charged RM0.20 per bag. According to Said et al. (2003), rewarding or penalising shoppers is a viable solution to encourage them to be more responsible towards the environment.

The wellbeing of agricultural workers was also considered relatively unimportant by respondents in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store, despite the emergence of several Good Agricultural Practice (GAP) schemes: (1) Malaysian Farm Good Agricultural Practice Scheme (SALM); (2) Malaysian Aquaculture Farm Certification Scheme (SPLAM); (3) the Livestock Farm Accreditation Scheme (SALT) and (4) Malaysian Organic Scheme (SOM) (Salleh et al. 2007). According to Othman (2005) and Menon (2010), farms that adopt GAP operate in a sustainable and environmentally friendly way with appropriate concerns directed towards workers' health and safety to produce products that are of good quality and safe for consumption. The implementation of GAP ensures that the rights of farm workers are taken care of, including appropriate dress codes and the employment of those workers who are over the age of 16 years

(Salleh et al. 2007). Given that the awareness of GAP among consumers in Malaysia is still low (Menon 2010) and adopting GAP schemes in Malaysia is still on a voluntarily basis (Salleh et al. 2007), there is no pressure for farms to adopt GAP. If consumers are exposed to the benefits of GAP schemes, they may recognise that GAP ensures the safety of the food produced, care for the environment and social responsibility towards workers' health, safety and welfare.

Objective 7:
7a. To identify the extent to which consumers' expectations (quality cues and quality attributes) are fulfilled by consumption (experiential quality).
7b. To identify the extent to which consumers adjust their expectations in response to dissatisfaction.

The seventh research objective revolves around the experiential quality attributes, which involve the consumers' feelings of satisfaction or dissatisfaction over the purchase of fresh food from a retail store. Respondents were often disappointed with the Halal status of the fresh food that they purchased (Table 12.22).

Although Halal was considered as an important criteria in the decision to purchase fresh/chilled meat because of religious issues, the findings indicated that respondents also want an assurance that the fresh fruit and vegetables purchased from a retail store is also Halal. Fresh fruit and vegetables are generally Halal and permissible to eat (Chaudry et al. 1997). However, without information about how the crops were grown such as the type of animal manures (particularly if from pigs) or composts used in fruit and vegetable production, consumers may have doubts about whether the fruit and vegetables are Halal. Furthermore, the concern about the Halal status of the produce may also involve those fruits and vegetables that have been semi-processed as they may contain ingredients that are not Halal (mayonnaise) or have been processed alongside or on machines that are not Halal. The requirement to guarantee that the vegetables are Halal was mentioned by Johnson et al. (2008), who highlighted that the vegetable industry in Asia has to operate in a transparent manner to provide assurances to consumers about the product integrity, safety and how the product has been produced.

Table 12.22: Occasions where respondents felt unhappy with the quality of fresh/chilled meat and fresh fruit and vegetables purchased with regard to the following desired outcomes

Fresh/chilled meat	Fresh fruit and vegetables		
	Potatoes	Spinach	Apples
The food is not guaranteed Halal. The food is unsafe to eat. The food is unhealthy and not nutritious. The food does not represent value for money. The food has a poor texture/mouth feel. The food has a bad taste. The food has not been produced in a way that protects worker welfare. The food has not been produced in a way that is good for the environment.	The food is not guaranteed Halal. The food is unsafe to eat. The food is unhealthy and not nutritious. The food does not represent value for money. The food has a poor texture/mouth feel. The food has a bad taste. The food has not been produced in a way that is good for the environment. The food has not been produced in a way that protects worker welfare.	The food is not guaranteed Halal. The food is unhealthy and not nutritious. The food is unsafe to eat. The food does not represent value for money. The food has a poor texture/mouth feel. The food has a bad taste. The food has not been produced in a way that is good for the environment. The food has not been produced in a way that protects worker welfare.	The food is not guaranteed Halal. The food is unsafe to eat. The food is unhealthy and not nutritious. The food does not represent value for money. The food has a bad taste. The food has a poor texture/mouth feel. The food has not been produced in a way that is good for the environment. The food has not been produced in a way that protects worker welfare.

Beside Halal, respondents were often dissatisfied with the level of food safety associated with their purchase of fresh/chilled meat, potatoes and apples. The findings correspond with earlier results which demonstrated that food safety was ranked among the most important criteria respondents considered in their decision to purchase fresh/chilled meat and fresh fruit and vegetables. Food safety has always been a concern for consumers when purchasing fresh/chilled meat (McEachern and Schroder 2002; Grunert 2005; Liu et al. 2006) and fresh fruit and vegetables (Baker 1999; Berdegue et al. 2005; Hadi et al. 2010).

The results were found to be consistent with the dissatisfaction respondents experienced after purchasing both types of fresh/chilled meat (beef and chicken). However, respondents' dissatisfaction experiences for potatoes, spinach and apples differed because of the different factors that influenced the respondents' decision to purchase each crop.

The results were found to be bipolar, where some respondents only very occasionally had an unsatisfactory experience versus those respondents who were always dissatisfied with the fresh food they purchased. According to Tyagi and Kumar (2004, p. 65), a consumer's satisfaction over a product is a function of the closeness between the consumers' product expectations and the product's perceived performance. Batt (2004) and Tyagi and Kumar (2004) suggest that a consumer will be highly satisfied when the product's performance exceeds the consumers' product expectations and dissatisfied when the product's performance falls short of the consumers' product expectations. The satisfaction or dissatisfaction level of the purchase may be determined by the variables respondents considered in making their decision to purchase and the place of purchase.

Unfresh product was the main reason respondents gave for feeling dissatisfied with the quality of the fresh/chilled meat and fresh fruit and vegetables purchased from a retail store (Table 12.23).

Table 12.23: Reasons for dissatisfaction with the quality of fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	Fresh fruit and vegetables
Not fresh	Not fresh
Price	Taste
Cleanliness	Price
Taste	
Not Halal guaranteed	

The lack of freshness was most often described by the physical appearance of the product or the intrinsic quality cues. Those respondents who were unhappy in the fresh/chilled meat survey were most dissatisfied with the texture and colour of the meat; while rotten, sprouting, wilted and too many bruises were the major defects described by dissatisfied respondents who purchased fresh fruit and vegetables. Szybillio and Jacoby (1974) [cited in Bredahl (2004)] mentioned that intrinsic quality cues were generally stronger determinants of perceived quality than extrinsic quality cues. Therefore, consumers did not want to purchase a product which was visually defective to avoid early disappointment.

Price was mentioned by respondents as another reason for dissatisfaction with the fresh/chilled meat and fresh fruit and vegetables purchased. Given that the local media have continuously reported complaints by consumers that the price of fresh food is too high, this comes as no surprise. Jamaluddin (2008) reported that the price of local beef was expected to reach RM25/kg compared to the normal average price of RM18 to RM20/kg. Ariff (2007) mentioned that although the price of imported beef was relatively cheaper compared to local beef, given that the supply was unsteady, prices were expected to rise. As a result of prices continuing to rise for chicken, given that the demand is so high, the government has decided to list chicken as a controlled item (Jalil 2009). Yahaya (2007) reported that consumers expressed their dissatisfaction over the need to spend more of their income to purchase food such as vegetables, fish and chicken. Given that the data was collected during Chinese New Year, which is one of the main festive seasons celebrated in Malaysia, the increasing prices of fresh food were a major concern for consumers.

Taste was also another factor mentioned by respondents which contributed to their level of dissatisfaction with the purchase of fresh/chilled meat and fresh fruit and vegetables from a retail store. Given that taste is a sensory characteristic which can only be evaluated after purchase, Grunert et al. (2004) mentioned that many other search quality cues, as well as meal preparation, are firmly linked to taste. Egan et al. (2001) suggested that the fat content and texture of the meat were attributes to influence taste. In the purchase of fresh produce, Yiridoe et al. (2007) linked taste, freshness and shelf life together. There have also been other studies which associate taste with credence characteristics such as organic. Harper and Makatouni (2002) demonstrated that consumers who purchased organic meat believed that the meat was more tasty than conventionally produced meat. In Malaysia, Majid (2007) reported that organic village chicken, which was locally grown, tasted better than the meat from chicken which had been given antibiotics and growth hormones. Given that the quality of food is a subjective matter from the consumers' point of view (Brunso et al. 2002), while the same quality cues reinforce the next purchase, they do not always deliver the taste that the consumers expect.

Cleanliness and Halal were among the reasons cited by respondents for their dissatisfaction with the fresh/chilled meat purchased from a retail store. Cleanliness was mainly associated with the place of purchase. Respondents were concerned and disturbed when doing their food shopping in an unhygienic environment. Shaari and Arifin (2009) revealed that consumers are unlikely to purchase if vendors do not practice cleanliness. While the Harakah Daily reported that Chow Kit market, which is situated in the heart of Kuala Lumpur, was unclean (*Masalah kebersihan Pasar Chow Kit terus mengganggu* 2009), the vendors indicated that there was no proper sanitation system in place. The Kuala Lumpur Wholesale Market is another market reported to be operating under unhygienic conditions (Seadey 2010). As a result of the unhygienic condition in most traditional retail outlets, consumers who are concerned about cleanliness may choose to purchase their fresh/chilled meat from a modern retail outlet. Jabbar and Admassu (2009) demonstrate that supermarkets operate a much cleaner environment than traditional stores.

The issues surrounding Halal are particularly important for Muslim consumers. A review of the literature identifies that the problem with Halal food in Malaysia arises from: (1) an abuse of the Halal logo and certification which can mislead consumers about the Halal status of the product (Hayati et al. 2008 [cited in Noordin et al. 2009]), and (2) the lack of enforcement by JAKIM to take legal action against these traders/retailers who have cheated the consumers (Shafie and Othman 2006). Given that Shaari and Arifin (2009) report that consumers in Malaysia must be constantly reassured that the product they are about to purchase is Halal, the presence of an Halal logo is important in choosing a food product. Beside the presence of a Halal logo or certificate, the findings of this research demonstrate that some consumers prefer to purchase their fresh/chilled meat from butchers that they trust.

When experiencing dissatisfaction with either the quality of fresh/chilled meat and fresh fruit and vegetables, both groups of respondents indicate that they would be more selective when they next purchased (Table 12.24).

Table 12.24: What respondents do when dissatisfied with quality of fresh/chilled meat and fresh fruit and vegetables purchased from a retail store

Fresh/chilled meat	Fresh fruit and vegetables
I am more selective the next time I buy	I am more selective the next time I buy

In other words, respondents held themselves responsible for their own inability to select fresh food from a retail store which would potentially satisfy their needs. The Consumers Association of Penang (CAP) [cited in Ramayah et al. 2003] agrees, stating that when Malaysian consumers experience dissatisfaction with a product, they get angry with themselves rather than the manufacturer. However, according to Ramayah et al. (2003), it is not uncommon for Malaysians to complain when dissatisfied with the purchase of a defective product. Given that the culture of Indonesians is relatively similar to Malaysia, Phau and Sari (2004) found that when Indonesian consumers were dissatisfied with a product or service, they often blame the retailers for providing such poor service or products in such a poor condition.

Heung and Lam (2003) discuss how cultural issues may affect consumer's complaint behaviour. For instance, Gao et al. (1996) [cited in Heung and Lam 2003] portrayed Chinese consumers as having a rather passive style of communication when expressing dissatisfaction. Given that in Asian cultures, it is important to maintain harmony within the customer-business relationship, most consumers avoid direct confrontation and remain in silence when they are dissatisfied (Heung and Lam 2003; Ngai et al. 2007).

Nevertheless, gathering information about consumers dissatisfaction with the products purchased is a significant aspect of consumer behaviour research. Otherwise, retailers may make an erroneous assumption that consumers are satisfied with the product offered in the market. Hernandez and Fugate (2004) mentioned that gathering knowledge about consumers' dissatisfaction and learning about customer complaint behaviour is essential because: (1) marketers are able to identify the sources which cause consumer disconfirmation; (2) to address those issues, and (3) to prevent consumer dissatisfaction or defection in the future.

The findings of this research reveal that consumers have different levels of confidence in believing that the fresh/chilled meat and fresh fruit and vegetables that they consume are safe to eat (Table 12.25).

Table 12.25: Confidence level

	Fresh/chilled meat		Fresh fruit and vegetables		Sig. (2-tailed)
	Mean	**SD**	**Mean**	**SD**	
How confident are you that the [type of product] that you consume are safe to eat?	5.08	0.89	4.57	0.89	0.000

where 1 is "not at all confident" and 6 is "very confident"

Unlike Peri (2006) and Keast (2009), who implicitly assume that the food purchased in any market is safe for consumption, this research demonstrates that respondents utilise various indicators to ascertain that the fresh/chilled meat and fresh fruit and vegetables are safe to eat (Table 12.26).

Table 12.26: Factors which lead respondents to conclude that the fresh/chilled meat and fresh fruit and vegetables were safe or not safe to eat

Fresh/chilled meat	Fresh fruit and vegetables
Halal	Freshness
Freshness	Based on previous experience
Cleanliness	Freedom from chemicals residues
Label/brand	Label
Vendors – friendly and knowledgeable	Texture

Freshness and label/brand were cited by respondents as signifying that the food was safe when purchasing both fresh/chilled meat and fresh fruit and vegetables from a retail store. Becker et al. (2000) and Hoffmann (2000) identified freshness as the most important intrinsic quality cues when assessing the safety of meat. Enneking (2004) and Latouche et al. (1998) demonstrated how a label, which is an extrinsic quality cue, was influential in reassuring consumers about the safety of meat products. Becker et al. (2000) and Hoffmann (2000) also suggest that the origin of the meat is an important extrinsic quality cue which signifies food safety.

Conversely, there is little empirical research which associates the freshness of fruit and vegetables with food that is safe to eat. Food safety attributes for fresh produce

are mainly associated with the presence of chemical residues as demonstrated by Baker (1999) and Caswell (2000).

Although labels provide information to consumers, with an increase in the number of cases involving the misuse of labels attached to food products, consumers may begin to doubt the accuracy of labels. In purchasing meat products, Bernues et al. (2003) identified a group of consumers who relied on their trusted retailer to assess the safety of the product, rather than to depend on the label/brand. This study also found that respondents often trusted friendly and knowledgeable vendors to seek assurances that the fresh/chilled meat they purchased was safe to eat.

The importance of Halal, which includes the slaughter and hygiene practices and its implications for food safety have already been discussed. Thus it comes as no surprise that cleanliness was identified as an additional variable respondents associated with the safety of fresh/chilled meat. Ali et al. (2010) demonstrated how the environment in a retail store and hygiene status of the meat-processing equipment can encourage the growth of potential pathogens that may contaminate the meat if not regularly cleaned and disinfected.

In the purchase of fresh fruit and vegetables, respondents utilise their previous experience to determine that the food purchased is safe to eat. Zanoli and Naspetti (2002) demonstrate that the more frequently consumers purchase a product, the more experience they gain. Eventually, with more information stored in their mind, Zanoli and Naspetti (2002) believe that experienced buyers become more expert than occasional buyers.

According to Siegrist et al. (2003) [cited in De Jonge et al. 2007], consumer confidence in the safety of food purchased is based on familiarity and develops from the accumulation of positive experiences. As fresh food often needs to be cooked before consumption, a food safety assessment can be done by consumers prior to consumption. In a similar study conducted in the food service industry, Henson et al. (2006) mentioned that many aspects of food safety involved experience characteristics. However, Henson et al. (2006) and Grunert (2005) acknowledge that consumers utilise a range of other criteria to link their experience

with food safety. Nevertheless, De Jonge et al. (2007) mentioned that consumers who have experienced food borne illness are more pessimistic about food safety when purchasing food.

12.4 Managerial implications

This thesis provides valuable information for marketers to understand the behaviour of Malaysian consumers when purchasing fresh/chilled meat and fresh fruit and vegetables. Initially, the preliminary research findings suggested that elderly respondents had a strong desire to purchase their fresh food from traditional markets. The main findings then revealed that many younger respondents continue to purchase the majority of their fresh/chilled meat and fresh fruit and vegetables from traditional markets. Some literature claims that traditional markets will soon be displaced, losing their customers to modern retailers who offer higher quality and safe products, one-stop shopping and a more pleasant environment for their shoppers (Trappey and Lai 1997; Goldman et al. 1999; Reardon et al. 2003; Figuie and Moustier 2009). Conversely, the findings of this study demonstrate that Malaysian consumers will continue to purchase the majority of their fresh food from traditional markets due to guarantees that the food is Halal, the friendly service provided by vendors and the ability to bargain on price. Although there is an emerging trend for consumers to purchase more of their fresh food from supermarkets and hypermarkets, the traditional markets should not be abandoned.

A consistent pattern was found where respondents emphasised similar criteria (freshness, cleanliness, price and Halal) in their decision to purchase fresh food from a retail store. Retailers from both markets can capitalise on the store choice attributes which influence consumers' purchasing behaviour. Issues involving Halal and the preference to purchase meat from a trusted butcher were found to be important for Malaysians when purchasing meat from a retail store. Issues such as Halal meat being stored together with non-Halal meat and consumers suing a hypermarket over non-Halal chicken have lessened consumers' trust in purchasing fresh/chilled meat from a modern retail outlet. Therefore, modern retailers must emphasise the importance of only offering fresh/chilled meat that is Halal. While most fresh/chilled meat in supermarkets and hypermarkets are labelled with a Halal

logo, it is still insufficient for consumers to believe that the meat was slaughtered appropriately and according to Islamic rulings. Thus, modern retailers should provide personal assurances through monitoring the supply chain or establishing dedicated supply chains to ensure that the supply of fresh/chilled meat to supermarkets and hypermarkets are genuinely Halal.

Furthermore, Malaysians have emphasised the importance of food safety and cleanliness when shopping for fresh food. Traditional retailers are anticipated to change the way they do business in response to these issues if they are to become more competitive. According to Webster (2004), the traditional markets have the potential to disappear if no attention is given to enhance food safety procedures. Webster (2004) added that due to food safety concerns in the purchase of fresh meat, consumers in Asia, particularly the younger consumers, have strong preferences towards purchasing meat that is chilled or frozen. As a result of this, retailers in the traditional markets are shifting towards more modern systems of selling meat to consumers. Kamaron (2003) reported that as a result of the outbreak of the Nipah virus in 1999, all meat must be sold chilled instead of at room temperature in Singapore. Galvez (2010) also found that wet markets in the Philippines have starting to sell some frozen meat. This approach could be imitated by vendors operating in most traditional markets in Malaysia to enhance consumers' confidence towards the safety of the fresh meat offered for sale. Intervention from the government and local authorities is also needed to maintain the cleanliness of traditional markets. Among the activities that can be carried out to maintain the cleanliness of these traditional markets are: (1) to make it compulsory for vendors to attend courses and training related to proper food handling and food safety before granting a license; (2) to conduct regular and compulsory health testing for vendors, and (3) to conduct regular inspections in terms of compliance to health and sanitation on premises.

The findings of this research which linked a group of variables with a number of desired outcomes has significant implications for the marketing of fresh/chilled meat and fresh fruit and vegetables. For instance, country-of-origin was among the variables respondents used to signify that the food was guaranteed Halal. However, based on the researcher's observation and discussion with participants from the

focus group discussions and the main surveys, this type of information is not always available for consumers. Among the advantages of knowing the origin of the food prior to purchase are: (1) a perception of how the animals were raised (the usage of chemicals, antibiotics or growth promotants) and how fruit and vegetables have been grown (chemical residues) which may either elevate or reduce consumers concerns that the food is safe to eat; (2) to enable consumers to select fresh food from a particular country which is perceived to offer a higher quality product compared to another; (3) to support local producers, and (4) to support ethical methods of farming such as sustainable production and worker welfare (Lohr 2001; Krissoff et al. 2004). As a result of this, government authorities should make it mandatory for retailers to provide information on the origin of the fresh food to consumers.

From the literature, it is apparent that consumers who have strong preference for food quality and food safety search for labels or certificates attached to the fresh produce that they intend to purchase. This may support the need for GAP systems to be implemented along the supply chain in an attempt to differentiate products sold in different retail markets. Large retailers such as supermarkets and hypermarkets have the capacity to demand that their suppliers comply with standards that meet the consumers' demand for food that is guaranteed safe to eat.

This research has also found an association between appropriate slaughter and Halal certification as an indicator that the fresh/chilled meat purchased by respondents is safe to eat. Previously, the issues that surround Halal were mainly a concern for Muslim consumers. However, Bonne and Verbeke (2006), Rezai (2008) and Talib et al. (2008) have discussed the benefits of consuming meat that is Halal from the safety point of view. Nowadays, consuming meat that is Halal will not only meet religious requirements, but also food safety requirements. As a result of this, consumers from other religions often enquire about Halal in their decision to purchase fresh/chilled meat from a retail store.

The findings revealed that consumers considered a range of criteria which may depend on several factors such as religion, beliefs, preferences and experiences in making their decision to purchase fresh/chilled meat and fresh fruit and vegetables

from a retail store. This indicates opportunities for actors along the fresh food supply chain to segment their markets. For instance, consumers who are often dissatisfied with the purchase of fresh fruit and vegetables from a retail outlet were found to attach much greater importance to Halal, food safety, health and nutrition. In order to attract this segment of consumers, starting from the farm level, fruit and vegetables should be cultivated according to specific quality standards. As mentioned by Shamsudin et al. (2010), all supply chain participants in the agri-food system should translate such changes in Malaysian food consumption patterns into business opportunities.

Additionally, the research has revealed the major reasons for consumers' dissatisfaction with their purchase of fresh/chilled meat and fresh fruit and vegetables. This finding provides a basis for the actors in the supply chain to understand how Malaysian consumers deal with dissatisfaction. It is uncommon for Malaysian consumers to voice their disappointment over the food products that they have purchased which creates ambiguity for retailers in knowing whether consumers are happy with their purchase or not. It may be less complicated for traditional retailers as they often obtain direct feedback from their customers with regards to their purchase. However, it presents a challenge for supermarkets and hypermarkets to learn about their customers' satisfaction or dissatisfaction with the fresh food purchased from a retail store, given that modern retailers seldom deal directly with their consumers. As a result of this, modern retailers need to regularly collect feedback and ideas from their shoppers through surveys and customer feedback forms, and deal with the issues that arise without delay.

In conclusion, the findings of this thesis may also assist the government in developing new strategies to further enhance the Malaysian food industry in conjunction with developing agriculture as the engine of growth in the Malaysian economy. Given that Malaysia relies heavily on imported food, the attributes utilised by consumers when purchasing fresh food could provide the basis for government to redevelop the livestock industry, and the fresh fruit and vegetable industry. As Malaysia still relies on imported food, the importance of providing good quality, Halal, safe and healthy food should not be neglected.

12.5 Limitations of the study

Several limitations were identified at different stages of the study which may impact on the analysis of data and the findings of this study. Some limitations were created intentionally to establish some research boundaries, while other limitations are identified as opportunities for future research.

In order to set a research boundary, this study was limited to Malaysian consumers residing in the Klang Valley only. As a result of this, the respondents who participated in this study may not be representative for the whole of Malaysia. The behaviour of respondents from urban areas such as the Klang Valley may differ from the behaviour of respondents in rural areas and from those respondents in Sarawak or Sabah. At present, only those respondents living in the major metropolitan centres have access to modern retail outlets. Consequently, consumers in the rural areas may be dependent on the traditional markets for procuring their fresh food.

Due to limitations in financing this research, as well as time constraints, the sample size for this study was small as compared to most other studies. When performing data analysis, a small sample size may decrease the power of the statistical tests applied. A larger sample is anticipated to produce a more generalised result and any significant differences between the groups are more likely to be identified if the sample size is larger (Sampling n.d.). However, according to Deming (1990), the size of a sample is not the sole criteria for accuracy. Deming (1990) added that other criteria such as the procedure for stratification, the choice of sampling unit, and the formulas prescribed for the estimations are more important than sample size. Despite the small sample size, particularly in recruiting respondents from different ethnic groups, the findings of this research were able to demonstrate different preferences towards a particular retail store. Given that this study was among the first conducted to examine consumers' perceptions and experiences in purchasing fresh food from retail outlets in Malaysia, the researcher thought that the sample size for this study was reasonable. The findings of this research add to the current literature and provide suggestions for retailers, local vendors and various agencies involved in the marketing and distribution of fresh food in Malaysia.

The groups of product for this study were strictly limited to fresh/chilled meat (chicken and beef) and fresh fruit and vegetables (potatoes, spinach and apples). There are other products in the fresh food category including seafood, eggs and other types of tropical fruit and vegetables. There is evidence from the literature that a similar methodology could be applied for different fresh food categories. Besides examining consumers' attitudes towards the quality of fresh meat (Verbeke and Viaene 1999), Verbeke et al. (2007) also analysed consumers' attitudes towards the quality of fish. It is anticipated that with different fresh food categories, different findings may emerge.

The methods of data collection may have also introduced several limitations. For instance, the employment of research enumerators with different characteristics such as age, gender and ethnicity may encourage a broader diversity of respondents to participate. In Asia, special respect is paid to the elderly people in many situations, which may make it difficult for a younger person to approach and interview an older unrelated person. A gap may have existed as a result of the different characteristics possessed by the researcher, research enumerators and the respondents which then affected the data collection phase of this research study.

In attempting to cluster the respondents according to their preferred place of purchase, the data was strictly limited to socio-demographic characteristics only. This study did not include other psychographic characteristics of the consumers such as their lifestyle, interests, behaviour and attitudes. The utilisation of psychographic characteristics has been found to be the most appropriate tool for segmenting consumers. Brown and Turley (1997) mention that the fundamental principles of using psychographic variables to segment consumers are: (1) the ability to go beyond surface characteristics (demographic variables), and (2) to understand consumers' motivations for purchasing and using the products. According to Malhotra et al. (2008), psychographic characteristics provide information about how the consumers think and behave. While psychographic characteristics allow the researcher to understand why consumers purchase the product, socio-demographic characteristics merely allow the researcher to describe who purchased a particular product (Brown and Turley 1997). Other researchers have identified the weaknesses of socio-economic segmentation as: (1) having a too

narrow understanding the consumer behaviour (Boedeker and Marjanen 1993) and (2) the weak association between consumers' purchase behaviour and the socio-economic variables (Romano and Stefani 2006).

Several opportunities for future research may resolve the methodological limitations, financial and time constraints as experienced in this study.

12.6 Recommendations for future research

Despite the limitations highlighted in the previous section, there are several areas that are seen as fertile directions for future research to expand and enhance current knowledge.

Given that this study was limited to a fixed geographic scope, the Central Region of Malaysia, subsequent research could draw a sample from other regions such as the Northern Region (Perlis, Kedah, Penang and Perak), East Coast Region (Kelantan, Terengganu and Pahang), Southern Region (Negeri Sembilan, Malacca and Johor) and East Malaysia (Sabah and Sarawak). Conducting the study in different geographic localities will be necessary to capture the different ethnic characteristics of the Malaysian population. Furthermore, additional studies will be useful to validate the findings drawn from this study.

It is suggested that future researchers draw a larger sample size for this type of consumer study in order to capture the diversity in socio-demographic variables. While the impact of socio-demographic variables on the behaviour of consumers when purchasing fresh food were not reported in this study, much of the literature reports that socio-demographic variables such as age, gender, level of income and educational background may affect consumers' decision to purchase fresh food. For instance, the sample for this study was comprised predominantly of younger women. The more elderly population may have different views on store choice and the criteria they consider in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. Moreover, with a larger sample size, cluster analysis could be performed to demonstrate the relationship between store attributes and the factors which influence the consumers' decision to purchase fresh food.

In the attempt to generate a larger and more diverse sample, it is suggested that future researchers recruit research enumerators from different backgrounds. For instance, in order to overcome the low response rate based on ethnicity, future researchers could recruit Chinese and Indian research enumerators. Furthermore, elderly research enumerators should also be employed in an attempt to capture the interest and participation of the elderly respondents. This is due to the fact that respondents may feel more comfortable exchanging views with someone who is from the same ethnic and age group.

As discussed previously, issues which concern Halal, health and food safety are important to consumers. As transformations are still occurring in the food retail industry, changes in consumer behaviour are anticipated. Criteria that are less important today may become more important in the future. Taking the findings of this research as a base, it will be interesting for future research to explore the changes taking place in the behaviour of the consumers, as well as in the Malaysian food retail industry.

Even though the findings revealed the importance respondents gave to Halal, health and food safety, the study did not utilise a mechanism to measure consumers' willingness to pay for these additional attributes. Baker (1999) demonstrated how consumers who had a strong preference for food safety were willing to pay more to procure certified chemical free apples. Botonaki et al. (2006) suggested that consumers who are more health conscious were willing to pay more to purchase organic produce. As a result, an opportunity exists for future research to examine the consumers' willingness to pay for products which are certified or guaranteed safe.

The statistical techniques utilised in this study may not be the only way to analyse the data. One recommendation for future research is to modify the structure of the questionnaire in order for prospective researchers to construct a Structural Equation Model (SEM). Byrne (2001, p. 3) defines SEM as a statistical methodology that takes a confirmatory approach to the analysis of theory. In SEM, the causal processes for the study are represented by a series of linear relationships that are then modelled to facilitate a clearer conceptualisation of the theory. For instance, in

signifying food that tastes good, SEM allows the relationship between a number of different variables to be explored.

Finally, this study could be further expanded to examine the impact of the modernisation of the food retail industry on retailers in the traditional markets in Malaysia. Factors such as food safety, everything under one roof, convenience and cleanliness were among the criteria identified in this study which attract consumers to supermarkets and hypermarkets. Although factors such as the guarantee that the food purchased is Halal and the relationship established with the same butcher may prevent customers from changing to different retail outlets, retailers from the traditional markets may be affected by other changes that are occurring in the food retail industry. This area could be further investigated to provide new knowledge on regoverning markets.

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Appendix 1: Pro-forma for focus group discussion

Consumer's Perceptions and Experiences of Food Quality in Purchasing Fresh Food from Retail Outlets in Malaysia

Participants' selection criteria: Respondents must the person responsible for the purchase of fresh food (beef, chicken, fruit and vegetables) for the household.

Preliminary research objectives:

The objectives of the preliminary research were proposed to identify several issues on:

1. The type of fresh food (which were from the fresh/chilled meat and fresh fruit and vegetables category) consumers most often purchase.
2. To understand consumers' store choice behaviour when purchasing fresh food.
3. The differences in the quality of fresh food between modern retail outlets and traditional markets.
4. To understand consumers' preference between self select and pre-packs when purchasing fresh food.
5. To explore consumers point of view with regard to several food safety issues.

1. Introduction

Good morning and welcome to the focus group session on **Consumer's Perceptions and Experiences of Food Quality in Purchasing Fresh Food From Retail Outlets in Malaysia.**

Thank you for your time to join the Focus Group Discussion.

My name is Norshamliza Chamhuri and I am a PhD student from the Curtin University of Technology, Australia. Assisting me is Ms Intan and she is a going to be our moderator for today's discussion.

We want to know your perceptions and experiences of food quality in purchasing fresh food from retail outlets. Examples of fresh food are fruits, vegetables and meat products such as beef and chicken.

We will conduct the focus group with a series of questions. There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said.

Before we begin, let me remind you of some of the ground rules. Please speak up -- only one person should talk at a time. We are tape-recording the session because we don't want to miss any of your comments. If several are talking at the same

time, the tape will be difficult to transcribe and we may missed some of your comments.

We want to make sure that we hear everything you want to tell us, but we also need to make sure that everyone gets a chance to talk today. And please switch off your mobile phones as we do not want this to disturb on our discussion.

Participants are free to get themselves some drinks or food provided. You may also freely go to the toilet.

We try to keep this discussion as informal as possible. Relax while giving your output on the discussions.

The first session will last about two and a half hours and we will be taking a formal break for one hour, before we begin the second session. Well, let's begin.

[We will have a short introduction session to break the ice]

Topics on fresh/chilled meat

2. Store choice behaviour

1. From where do you buy most of the fresh/chilled meat that you consume in your household?
2. What percentage do you buy from the:

a. wet market

b. supermarket

c. others: ……..

3. Why do you purchase most of your fresh/chilled meat from this source?

3. Quality of fresh/chilled meat

1. When we talk about quality of fresh/chilled meat, what does it mean to you?
2. Do you perceive any differences in the quality of fresh/chilled meat between wet markets and supermarkets?
3. When you buy your fresh/chilled meat, do you prefer self select or pre-packs?
4. Do you see any differences in the quality between self select and pre-packs when you buy your fresh/chilled meat?

4. Chicken

1. How often do you purchase chicken?
2. How do you prepare/cook chicken?
3. Do you purchase a whole chicken or chicken portions? Which portions?
4. Do you prefer to buy fresh, chilled or frozen chicken?
5. What do you look for in your decision to purchase chicken?
6. Why are each of these attributes important to you? What do they signify? What do they lead to?
7. Show participants several photos of chicken. Are they interest to purchase the meat in the photograph?
8. What is the price do you normally pay for?

5. Beef

1. How often do you purchase beef?
2. How do you prepare/cook beef?
3. State your preferences for different types of beef cuts?
4. Do you prefer to buy fresh, chilled or frozen beef?
5. What do you look for in your decision to purchase beef?
6. Why are each of these attributes important to you? What do they signify? What do they lead to?
7. Show participants several photos of beef. Are they interest to purchase the meat in the photograph?
8. What is the price do you normally pay for?

6. Dealing with dissatisfaction

1. When you are dissatisfied with the quality of chicken and beef your have purchased, what do you do?

7. Food safety issues

1. How confident are you in the Malaysian food system in terms of managing each of the following:

a. Halal
b. Organically produced food (Organic beef, Organic chicken)
c. Genetically modified food

d. Bacterial contamination (Salmonella)/ Hygiene
e. Animal diseases such as mad cow disease and the avian flu
f. Hormones, antibiotics and chemicals in animals

2. Have you ever avoided or boycotted a particular food product because you were concerned about food safety? Is your boycott usually on a temporary basis or permanent?

[Break for lunch (1 hour)].

Appendix 2: Pro-forma for focus group discussion

Topics on fresh fruit and vegetables

1. Store choice behaviour

1. Which fresh fruit and vegetables do you most often purchase?
2. From where do you buy most of the fresh fruit and vegetables that you consume in your household?
3. What percentage do you buy from the:

a. wet market
b. supermarket
c. others: ……..

4. Why do you purchase most of your fresh fruit and vegetables from this source?

2. Quality of fresh fruit and vegetables

1. When we talk about quality of fresh fruit and vegetables, what does it mean to you?
2. Do you perceive any differences in the quality of fresh fruit and vegetables between wet markets and supermarkets?
3. When you buy your fresh fruit and vegetables, do you prefer self select or pre-packs?
4. Do you see any differences in the quality between self select and pre-packs when you buy your fresh fruit and vegetables?

3. Potatoes

1. How do you use/cook potatoes?
2. What do you look for in your decision to purchase potatoes?
3. Why are each of these attributes important to you? What do they signify? What do they lead to?
4. Show participants several photos of potatoes. Are they interest to purchase the potatoes in the photograph?
5. What is the price do you normally pay for?

4. Spinach

1. How do you use/cook spinach?
2. What do you look for in your decision to purchase spinach?
3. Why are each of these attributes important to you? What do they signify? What do they lead to?
4. Show participants several photos of spinach. Are they interest to purchase the spinach in the photograph?
5. What is the price do you normally pay for?

5. Apples

1. How do you use/cook apples?
2. What do you look for in your decision to purchase apples?
3. Why are each of these attributes important to you? What do they signify? What do they lead to?
4. Show participants several photos of apples. Are they interest to purchase the spinach in the photograph?
5. What is the price do you normally pay for?

6. Dealing with dissatisfaction

1. When you are dissatisfied with the quality of fresh fruit and vegetables your have purchased, what do you do?

7. Food safety issues

1. How confident are you in the Malaysian food system in terms of managing each of the following:

a. Organically produced food
b. Genetically modified fruit and vegetables
c. Chemical residues in plants

2. Do you wash your fruit and vegetables before you cook them? Why?

8. Socio-Demographic Questions

1. Gender:

- [ ] Male
- [ ] Female

2. Age:

- [ ] 18 – 25 years
- [ ] 26 – 34
- [ ] 35 – 44
- [ ] 45 – 54
- [ ] 55 – 64
- [ ] 65 and above

3. Marital status:

- [ ] Single
- [ ] Married
- [ ] Divorced
- [ ] Others: _____

4. Education level:

- [ ] UPSR
- [ ] PMR
- [ ] SPM/ O-levels
- [ ] STPM/ A-levels/ Pre-U/ Diploma
- [ ] Degree/ Professional
- [ ] Postgraduate

5. Occupation:

- [ ] Student
- [ ] Unemployed
- [ ] Housewife
- [ ] Full-time staff (government)
- [ ] Full-time staff (private)
- [ ] Self employed
- [ ] Others: ……

6. Ethnicity :

- [ ] Malay
- [ ] Chinese
- [ ] Indians
- [ ] Others: _____

7. How many people live in your household? _____

8. Do you have any young children? How many? _____

- [ ] Children aged less than 5 years old. _____
- [ ] Children aged between 6-12 years old. _____
- [ ] Teenagers aged between 13-17 years old. _____

9. In which suburb/town do you live? _____

10. Average monthly income:

- [ ] ≤ RM1,500
- [ ] RM1,501 – RM3,000
- [ ] RM3,001 – RM4,500
- [ ] RM4,501 – RM6,000
- [ ] RM6,001 – RM7,500
- [ ] RM7,501 – RM9,000
- [ ] ≥ RM9,001

11. Any comments regarding this focus group discussion/research:

…….

…….

…….

…….

Thank you for your kind response.

Hello.

Good morning/afternoon/evening. My name is Norshamliza Chamhuri. I am currently doing a PhD in agribusiness at Curtin University of Technology, Perth, Australia.

I am conducting a study on consumer's perceptions and experiences of food quality in purchasing fresh food from retail outlets in Malaysia.

This survey will take approximately 15 minutes to complete. Do you have the time to complete this survey?

YES Proceed
NO Thank the respondent

Are you a Malaysian and currently residing in Klang Valley?

YES Proceed
NO Thank the respondent

In your household, are you personally involved in the decision to purchase fresh food?

YES Proceed
NO Thank the respondent

Would you like to answer this questionnaire in

BAHASA Hand in the questionnaire in Bahasa
ENGLISH Hand in the questionnaire in English

Before we proceed, I would like to assure you that all the information we collect will be kept in the strictest confidence and used for research purposes only.

From the data that we collect, analyse and publish, it will not be possible to identity any individual.

Furthermore, your participation in this survey is completely voluntary. Should you necessary, you may withdraw at any time without prejudice.

Appendix 3: Fresh/chilled meat questionnaire

CONSUMER'S PERCEPTIONS AND EXPERIENCES OF FOOD QUALITY IN PURCHASING FRESH FOOD FROM RETAIL OUTLETS IN MALAYSIA

This box is for office use only:

Kod responden:
Nama pembanci:
Tarikh membanci:
Tempat membanci:
Masa mula/ tamat membanci:
Disemak oleh:

1. From where do you buy MOST of the **fresh/ chilled meat** that you consume in your household?

   [Please circle ONE answer only]

   1. Supermarket
   2. Hypermarket
   3. Wet market/ Fresh market
   4. Farmers market
   5. Night market
   6. Wholesale market
   7. Grocery store/ mini market

2. How often do you purchase **fresh/ chilled meat** from this retail outlet?

   [According to your answer in Question1, please circle ONE answer only]

   1. Daily
   2. 2-3 times per week
   3. Once a week
   4. Once every 2 weeks
   5. Once a month
   6. Others: …….[Please specify]

3. What proportion of the total amount of the **fresh/ chilled meat** that you buy are purchased from this retail outlet? [According to your answer in Question 1]

   …….(%)

   If you purchase 100% of your **fresh/ chilled meat** from this retail outlet, please go to Question 5 on page 2.

4. From where else do you purchase **fresh/ chilled meat**? Please tick all of those retail outlets from which you purchase **fresh/ chilled meat** and indicate the proportion of the **fresh/ chilled meat** that you buy. Please include the figure from Question 3 to ensure that the total = 100%

	√	%
Supermarket		
Hypermarket		
Wet market/ Fresh market		
Farmers market		
Night market		
Wholesale market		
Grocery store/ mini market		
	TOTAL	100%

5. In making your decision to purchase **fresh/ chilled meat** from your preferred retail outlet, what are the major criteria that influence your choice?

a) …….
b) …….
c) …….
d) …….
e) …….

6. On a scale of 1 to 6 where 1 is “Not at all important” and 6 is “Very important”, how important are EACH of the following criteria in your choice of retail outlet?

	Not at all important					Very important
Competitive price	1	2	3	4	5	6
Clean	1	2	3	4	5	6
Easy parking	1	2	3	4	5	6
Everything all under one roof	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Near my house/ work place	1	2	3	4	5	6
Shopping points/ loyalty programs	1	2	3	4	5	6
Cater for kids	1	2	3	4	5	6
Trolley and baskets are provided	1	2	3	4	5	6
Air-conditioned	1	2	3	4	5	6
Offer special prices or discounts	1	2	3	4	5	6
Well organized/ well laid out	1	2	3	4	5	6
A lot of sections (wet and dry sections)	1	2	3	4	5	6
I can self select	1	2	3	4	5	6
Good customer service/ friendly staff	1	2	3	4	5	6
Attractive display/ presentation	1	2	3	4	5	6
Good quality produce	1	2	3	4	5	6
All product is clearly priced	1	2	3	4	5	6
Knowledgeable staff	1	2	3	4	5	6
Advertising on radio/ tv/ newspaper	1	2	3	4	5	6
Return/ refund policy	1	2	3	4	5	6
Trading hours	1	2	3	4	5	6
A wide range of fresh produce	1	2	3	4	5	6
A wide range of other fresh products	1	2	3	4	5	6
Fresh produce is refrigerated	1	2	3	4	5	6
Opportunity to bargain on price	1	2	3	4	5	6
Origin of the product is clearly displayed	1	2	3	4	5	6
Sample of the product	1	2	3	4	5	6
Local produce	1	2	3	4	5	6
Product easily accessible	1	2	3	4	5	6
Credit facilities	1	2	3	4	5	6
Quick/ fast checkout	1	2	3	4	5	6
Loyalty/ always shop there	1	2	3	4	5	6
Product is clearly labeled	1	2	3	4	5	6

7. When you think about the quality of the **fresh/ chilled meat** that you buy, what criteria do you consider?

a) …….
b) …….
c) …….
d) …….
e) …….

8. Quality means many different things to different people. Here are some of the responses other people have provided. On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot", how important are EACH of the following statements.

Quality means that the product…	I disagree a lot					I agree a lot
is fresh	1	2	3	4	5	6
is free of chemical residues	1	2	3	4	5	6
will taste good	1	2	3	4	5	6
is nutritious	1	2	3	4	5	6
is safe to eat	1	2	3	4	5	6
has been produced in a way that is good for the environment	1	2	3	4	5	6
was produced in a way that did not endanger the farmers	1	2	3	4	5	6
is free from pests and diseases	1	2	3	4	5	6
is free from antibiotics/ growth promotants	1	2	3	4	5	6
looks attractive	1	2	3	4	5	6
will have a long shelf life	1	2	3	4	5	6
is good value for money	1	2	3	4	5	6
I will not be disappointed when I eat the product	1	2	3	4	5	6
I will be able to use most if not all of the product I have purchased	1	2	3	5	5	6
is attractively packaged	1	2	3	4	5	6
will be more expensive	1	2	3	4	5	6
is guaranteed Halal	1	2	3	4	5	6
was produced and with due regard for animal welfare	1	2	3	4	5	6

9. Do you perceive any differences in the quality of **fresh/ chilled meat** between modern retail outlets and traditional markets? [Please circle ONE answer only]

1. Yes
2. No

10. Which of the two retail outlets offer the best quality meat?

    [Please circle ONE answer only]

    1. Modern retail outlets
    2. Traditional markets

11. In what ways is the quality of meat better from this retail outlet? [According to your answer in Question 10]

    a) …….
    b) …….
    c) …….
    d) …….
    e) …….

12. On a scale of 1 to 6 where 1 is “I disagree a lot” and 6 is “I agree a lot” to what extent do you disagree or agree with EACH of these statements:

	I disagree a lot					I agree a lot
The quality of the fresh meat available is better in supermarkets	1	2	3	4	5	6
Supermarkets operate everyday while traditional markets operate only on certain days of the week	1	2	3	4	5	6
Consumers can bargain on price in wet markets	1	2	3	4	5	6
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	1	2	3	4	5	6
I often meet my friends when I shop at traditional markets	1	2	3	4	5	6
Supermarkets offer a wider range of fresh food	1	2	3	4	5	6
At traditional markets, the vendors remember my name	1	2	3	4	5	6
I cannot buy the other household items I need if I shop at traditional markets	1	2	3	4	5	6
I go to supermarkets because of the shopping points I get	1	2	3	4	5	6
The children feel comfortable when I shop at supermarkets	1	2	3	4	5	6
Traditional markets seldom have a good or clean environment	1	2	3	4	5	6
Supermarkets offer better customer service than the traditional markets	1	2	3	4	5	6
I can return easily goods if I’m not satisfied when I buy them from traditional markets	1	2	3	4	5	6
I buy my other household goods from supermarkets but I buy my chicken and beef supplies from traditional markets	1	2	3	4	5	6
Traditional markets offer better quality meat at a much cheaper price	1	2	3	4	5	6
I can return easily goods that I’m not satisfied with after purchasing it from supermarkets	1	2	3	4	5	6
Fresh meat is displayed better in supermarkets	1	2	3	4	5	6
Chicken and beef are fresher in traditional markets	1	2	3	4	5	6
I prefer to buy my fresh meat from the same vendor in the traditional markets	1	2	3	4	5	6
Products in the supermarkets is clearly priced	1	2	3	4	5	6
Retailers in the traditional market are more knowledgeable about the products they sell	1	2	3	4	5	6

Do you buy **chicken**?

YES Proceed to Question 13
NO Please go to Question 22 on page 11

13. Thinking specifically about **chicken**, how often do you purchase **chicken**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

14. In what form do you most often buy fresh/ chilled **chicken**? Please indicate the proportion (%) for EACH form that you buy.

	(%)
Whole dressed chicken	
Chicken portions	
Chicken drumsticks	
Fillets skin on	
Fillets skin off	
Chicken wings	
Chicken feet	
Chicken liver	
Chicken ribs/ keel	
Chicken center	
Chicken minced	
Chicken bishop	
Chicken cubes	
Chicken breast	
Chicken thigh	
Chicken gizzard	
TOTAL	**100%**

15. How do you cook **chicken** in your household?

a)…….
b)…….
c)…….
d)…….
e)…….

16. What criteria do you use in your decision to purchase **fresh/ chilled chicken** from retail outlets?

a)…….
b)…….
c)…….
d)…….
e)…….

17. Thinking about **chicken**, how important are each of the following criteria in your decision to purchase where 1 is "Not at all important" and 6 is "Very important",

	Not at all important					Very important
Appropriately slaughtered (Halal)	1	2	3	4	5	6
Halal certificate	1	2	3	4	5	6
Quality assurance label	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Skin colour	1	2	3	4	5	6
Flesh colour	1	2	3	4	5	6
Smell/ Odour	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Intended use	1	2	3	4	5	6
Fat content	1	2	3	4	5	6
Clean/ no flies	1	2	3	4	5	6
Size	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Available as individual parts	1	2	3	4	5	6
Pre-packed	1	2	3	4	5	6
Free of chemical/ growth promotants	1	2	3	4	5	6
Free from antibiotics	1	2	3	4	5	6
Raised in a humane way	1	2	3	4	5	6
Grown on local farms	1	2	3	4	5	6
Organically grown	1	2	3	4	5	6
Marbling	1	2	3	4	5	6
Leanness	1	2	3	4	5	6
Label/ brand	1	2	3	4	5	6

18. Which of the following criteria in Question 17 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 15
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

19. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase fresh/ chilled **chicken**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

20. On average, how often do you feel **unhappy** with the quality of **chicken** you have purchased from your preferred retail outlet with regard to the following desired outcomes? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

21. What are the main reasons for your **dissatisfaction** with the quality of the **chicken** you have purchased?

a) …….
b) …….
c) …….
d)…….
e) …….

Do you buy **beef**?

YES Proceed to Question 22
NO Please go to Question 31 on page 15

22. Thinking specifically about **beef**, how often do you purchase **beef**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

23. In what form do you most often buy **fresh/ chilled beef**? Please indicate the proportion (%) for EACH form that you buy.

	(%)
Beef cube	
Beef strip	
Beef chuck tender	
Beef eye round	
Soup meat	
Beef minced	
Beef bone (soup)	
Beef cutlet	
Beef t-bone	
Beef fillet	
Beef topside	
Beef tenderloin	
Ox tail	
TOTAL	**100%**

24. How do you cook **beef** in your household?

a) …….
b) …….
c) …….
d) …….
e) …….

25. What criteria do you use in your decision to purchase **fresh/ chilled beef** from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

26. Thinking about **beef**, how important are each of the following criteria in your decision to purchase where 1 is "Not at all important" and 6 is "Very important",

	Not at all important					Very important
Skin colour	1	2	3	4	5	6
Flesh colour	1	2	3	4	5	6
Size	1	2	3	4	5	6
Clean/ no flies	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Smell/ Odour	1	2	3	4	5	6
Available as individual parts	1	2	3	4	5	6
Quality assurance label	1	2	3	4	5	6
Halal certificate	1	2	3	4	5	6
Appropriately slaughtered (Halal)	1	2	3	4	5	6
Intended use	1	2	3	4	5	6
Pre-packed	1	2	3	4	5	6
Label/ brand	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Free from antibiotics	1	2	3	4	5	6
Organically grown	1	2	3	4	5	6
Marbling/ fat content	1	2	3	4	5	6
Free of chemical/ growth promotants	1	2	3	4	5	6
Leanness	1	2	3	4	5	6
Grown on local farms	1	2	3	4	5	6
Raised in a humane way	1	2	3	4	5	6

27. Which of the following criteria in Question 26 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 26
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

28. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase **fresh/ chilled beef**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

29. On average, how often do you feel **unhappy** with the quality of **beef** you have purchased from your preferred retail outlet with regard to the following desired outcome? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

30. What are the main reasons for your **dissatisfaction** with the quality of the **beef** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

31. When you are **dissatisfied** with the quality of **fresh/ chilled meat** you have purchased, what do you do? On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot" to what extent do you disagree/ agree with EACH of these statements:

	I disagree a lot					I agree a lot
I am always satisfied with my purchase	1	2	3	4	5	6
I throw them out	1	2	3	4	5	6
I change shops	1	2	3	4	5	6
I inform/ complain to the seller	1	2	3	4	5	6
I return it to the shop	1	2	3	4	5	6
I just eat it/ cook it	1	2	3	4	5	6
I stop buying	1	2	3	4	5	6
I am more selective the next time I buy	1	2	3	4	5	6
I purchase less	1	2	3	4	5	6
I do nothing	1	2	3	4	5	6
I change brands	1	2	3	4	5	6

32. On a scale of 1 to 6 where 1 is "Not at all confident" and 6 is "Very confident", how confident are you that the **fresh/ chilled meat** that you consume are safe to eat? [Please circle ONE answer only]

Not at all confident Very confident

1	2	3	4	5	6

33. According to your response in Question 32, what factors lead you to conclude that the **fresh/ chilled meats** that you buy are safe or not safe to eat?

a) …….
b) …….
c) …….
d) …….
e) …….

34. How confident are you of the Malaysian food system in terms of managing each of the following, where 1 is “Not at all confident” and 6 is “Very confident”,

	Not at all confident					Very confident
Organically produced food	1	2	3	4	5	6
Genetically modified fruits and vegetables	1	2	3	4	5	6
Chemical residues	1	2	3	4	5	6
Fair trade	1	2	3	4	5	6
Sustainable production	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Water pollution	1	2	3	4	5	6
Waste management	1	2	3	4	5	6
Conservation biodiversity	1	2	3	4	5	6
Animal welfare	1	2	3	4	5	6
Recycling packaging	1	2	3	4	5	6
Halal	1	2	3	4	5	6
Hormones, antibiotics and growth promotants	1	2	3	4	5	6
Functional foods/ probiotics	1	2	3	4	5	6
Microbial contamination	1	2	3	4	5	6

35. Have you ever avoided or boycotted a particular food product because you were concerned about food safety?

…….
…….
…….
…….
…….

36. Is your boycott usually on a temporary basis or permanent? What are the reasons for your boycott?

…….
…….
…….
…….
…….

And finally, a few questions about yourself:

37. Gender (Please circle ONE answer only):

1. Male
2. Female

38. Age (Please circle ONE answer only):

1. 18 – 25 years old
2. 26 – 34 years old
3. 35 – 44 years old
4. 45 – 54 years old
5. 55 – 64 years old
6. 65 and above

39. Marital status (Please circle ONE answer only):

1. Single
2. Married
3. Divorced/ widowed
4. Others: ……[Please specify]

40. Education level (Please circle ONE answer only):

1. Primary school
2. Secondary school
3. Diploma
4. First degree/ professional certificate
5. Postgraduate

41. Occupation: ……[Please specify]

42. Race (Please circle ONE answer only):

1. Malay
2. Chinese
3. Indian
4. Others:……[Please specify]

43. Including yourself, how many people live in your household? _____ people

44. Do you have any children under 18 living in your household? (Please circle ONE answer only):

1. Yes Proceed to Question 45
2. No Please go to Question 46

45.How many?

	Children aged less than 5 years old: _____ people.
	Children aged between 6 – 12 years old: _____ people.
	Teenagers aged between 13 – 17 years old: _____ people.

46.Your postcode area: …….[Please specify]

47. Your monthly income (for single); Your combined income (for married); Your spouse's income (for non-working individuals):

(Please circle ONE answer only):

1. Less than RM1,500
2. RM1,501 – RM3,000
3. RM3,001 – RM4,500
4. RM4,501 – RM6,000
5. RM6,001 – RM7,500
6. RM7,501 – RM9,000
7. RM9,001 and above.

Thank you for your kind response.

Appendix 4: Fresh fruit and vegetable questionnaire

CONSUMER'S PERCEPTIONS AND EXPERIENCES OF FOOD QUALITY IN PURCHASING FRESH FOOD FROM RETAIL OUTLETS IN MALAYSIA

This box is for office use only:

Kod responden:
Nama pembanci:
Tarikh membanci:
Tempat membanci:
Masa mula/ tamat membanci:
Disemak oleh:

1. From where do you buy MOST of the fresh fruit and vegetables that you consume in your household?

   [Please circle ONE answer only]

   1. Supermarket
   2. Hypermarket
   3. Wet market/ Fresh market
   4. Farmers market
   5. Night market
   6. Wholesale market
   7. Grocery store/ mini market

2. How often do you purchase fresh fruit and vegetables from this retail outlet?

   [According to your answer in Question1, please circle ONE answer only]

   1. Daily
   2. 2-3 times per week
   3. Once a week
   4. Once every 2 weeks
   5. Once a month
   6. Others: …….[Please specify]

3. What proportion of the total amount of the fresh fruit and vegetables that you buy are purchased from this retail outlet? [According to your answer in Question 1]

   …….(%)

   If you purchase 100% of your fresh fruit and vegetables from this retail outlet, please go to Question 5 on page 2.

4. From where else do you purchase fresh fruit and vegetables? Please tick all of those retail outlets from which you purchase fresh fruit and vegetables and indicate the proportion of the fresh fruit and vegetables that you buy. Please include the figure from Question 3 to ensure that the total = 100%

	√	%
Supermarket		
Hypermarket		
Wet market/ Fresh market		
Farmers market		
Night market		
Wholesale market		
Grocery store/ mini market		
	TOTAL	100%

5. In making your decision to purchase fresh fruit and vegetables from your preferred retail outlet, what are the major criteria that influence your choice?

a) …….
b) …….
c) …….
d) …….
e) …….

6. On a scale of 1 to 6 where 1 is “Not at all important” and 6 is “Very important”, how important are EACH of the following criteria in your choice of retail outlet?

	Not at all important					Very important
Competitive price	1	2	3	4	5	6
Clean	1	2	3	4	5	6
Easy parking	1	2	3	4	5	6
Everything all under one roof	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Near my house/ work place	1	2	3	4	5	6
Shopping points/ loyalty programs	1	2	3	4	5	6
Cater for kids	1	2	3	4	5	6
Trolley and baskets are provided	1	2	3	4	5	6
Air-conditioned	1	2	3	4	5	6
Offer special prices or discounts	1	2	3	4	5	6
Well organized/ well laid out	1	2	3	4	5	6
A lot of sections (wet and dry sections)	1	2	3	4	5	6
I can self select	1	2	3	4	5	6
Good customer service/ friendly staff	1	2	3	4	5	6
Attractive display/ presentation	1	2	3	4	5	6
Good quality produce	1	2	3	4	5	6
All product is clearly priced	1	2	3	4	5	6
Knowledgeable staff	1	2	3	4	5	6
Advertising on radio/ tv/ newspaper	1	2	3	4	5	6
Return/ refund policy	1	2	3	4	5	6
Trading hours	1	2	3	4	5	6
A wide range of fresh produce	1	2	3	4	5	6
A wide range of other fresh products	1	2	3	4	5	6
Fresh produce is refrigerated	1	2	3	4	5	6
Opportunity to bargain on price	1	2	3	4	5	6
Origin of the product is clearly displayed	1	2	3	4	5	6
Sample of the product	1	2	3	4	5	6
Local produce	1	2	3	4	5	6
Product easily accessible	1	2	3	4	5	6
Credit facilities	1	2	3	4	5	6
Quick/ fast checkout	1	2	3	4	5	6
Loyalty/ always shop there	1	2	3	4	5	6
Product is clearly labeled	1	2	3	4	5	6

7. When you think about the quality of the fresh fruit and vegetables that you buy, what criteria do you consider?

a) …….
b) …….
c) …….
d) …….
e) …….

8. Quality means many different things to different people. Here are some of the responses other people have provided. On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot", how important are EACH of the following statements.

Quality means that the product…	I disagree a lot					I agree a lot
is fresh	1	2	3	4	5	6
is free of chemical residues	1	2	3	4	5	6
will taste good	1	2	3	4	5	6
is nutritious	1	2	3	4	5	6
is safe to eat	1	2	3	4	5	6
has been produced in a way that is good for the environment	1	2	3	4	5	6
was produced in a way that did not endanger the farmers	1	2	3	4	5	6
is free from pests and diseases	1	2	3	4	5	6
is free from dirt and soil	1	2	3	4	5	6
looks attractive	1	2	3	4	5	6
will have a long shelf life	1	2	3	4	5	6
is good value for money	1	2	3	4	5	6
I will not be disappointed when I eat the product	1	2	3	4	5	6
I will be able to use most if not all of the product I have purchased	1	2	3	5	5	6
is attractively packaged	1	2	3	4	5	6
will be more expensive	1	2	3	4	5	6

9. Do you perceive any differences in the quality of fresh fruit and vegetables between modern retail outlets and traditional markets? [Please circle ONE answer only]

    1. Yes
    2. No

10. Which of the two retail outlets offer the best quality of fresh fruit and vegetables?

    [Please circle ONE answer only]

    1. Modern retail outlets
    2. Traditional markets

11. In what ways is the quality of fresh fruit and vegetables better from this retail outlet? [According to your answer in Question 10]

    a) …….
    b) …….
    c) …….
    d) …….
    e) …….

12. On a scale of 1 to 6 where 1 is “I disagree a lot” and 6 is “I agree a lot” to what extent do you disagree or agree with EACH of these statements:

	I disagree a lot					I agree a lot
The quality of the fresh produce available is better in supermarkets	1	2	3	4	5	6
Supermarkets operate everyday while traditional markets operate only on certain days of the week	1	2	3	4	5	6
Consumers can bargain on price in wet markets	1	2	3	4	5	6
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	1	2	3	4	5	6
I often meet my friends when I shop at traditional markets	1	2	3	4	5	6
Supermarkets offer a wider range of fresh food	1	2	3	4	5	6
At traditional markets, the vendors remember my name	1	2	3	4	5	6
I cannot buy the other household items I need if I shop at traditional markets	1	2	3	4	5	6
I go to supermarkets because of the shopping points I get	1	2	3	4	5	6
The children feel comfortable when I shop at supermarkets	1	2	3	4	5	6
Traditional markets seldom have a good or clean environment	1	2	3	4	5	6
Supermarkets offer better customer service than the traditional markets	1	2	3	4	5	6
I can return easily goods if I’m not satisfied when I buy them from traditional markets	1	2	3	4	5	6
I buy my other household goods from supermarkets but I buy my fruit and vegetables from traditional markets	1	2	3	4	5	6
Traditional markets offer better quality produce at a much cheaper price	1	2	3	4	5	6
I can return easily goods that I’m not satisfied with after purchasing it from supermarkets	1	2	3	4	5	6
Fresh produce is displayed better in supermarkets	1	2	3	4	5	6
Fruit and vegetables are fresher in traditional markets	1	2	3	4	5	6
I prefer to buy my fresh fruit and vegetables from the same vendor in the traditional markets	1	2	3	4	5	6
Products in the supermarkets is clearly priced	1	2	3	4	5	6
Retailers in the traditional market are more knowledgeable about the products they sell	1	2	3	4	5	6

Do you buy **potatoes**?

YES Proceed to Question 13
NO Please go to Question 20 on page 11

13. Thinking specifically about **potatoes**, how often do you purchase **potatoes**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

14. What criteria do you use in your decision to purchase fresh **potatoes** from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

15. With regard to **potatoes**, how important are each of the following criteria in your decision to purchase where 1 is "Not at all important" and 6 is "Very important",

	Not at all important					Very important
Skin colour	1	2	3	4	5	6
Washed	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Intended use	1	2	3	4	5	6
Free from soil	1	2	3	4	5	6
Variety	1	2	3	4	5	6
Flesh colour	1	2	3	4	5	6
Depth of eyes	1	2	3	4	5	6
Freedom from pests and disease	1	2	3	4	5	6
Freedom from sprouting	1	2	3	4	5	6
Freedom from chemical residues	1	2	3	4	5	6
Firmness	1	2	3	4	5	6
Tuber size	1	2	3	4	5	6
Tuber shape	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Label or brand	1	2	3	4	5	6
Availability of product information in-store	1	2	3	4	5	6
Newspaper advertising/ catalogues	1	2	3	4	5	6
Advice from sales assistants	1	2	3	4	5	6
Potatoes is prepacked	1	2	3	4	5	6
Place of purchased	1	2	3	4	5	6
Locally grown	1	2	3	4	5	6
Organic	1	2	3	4	5	6
Favourable prior purchase	1	2	3	4	5	6

16. Which of the following criteria in Question 15 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 15
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

17. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase fresh **potatoes**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

18. On average, how often do you feel **unhappy** with the quality of **potatoes** you have purchased from your preferred retail outlet with regard to the following desired outcomes? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

19. What are the main reasons for your **dissatisfaction** with the quality of the **potatoes** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

Do you buy **spinach**?

YES Proceed to Question 20
NO Please go to Question 27 on page 15

20. Thinking specifically about **spinach**, how often do you purchase **spinach**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

21. Thinking specifically about **spinach,** what criteria do you use in your decision to purchase fresh spinach from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

22. With regard to **spinach,** how important are each of the following criteria in your decision to purchase where 1 is “Not at all important” and 6 is “Very important”,

	Not at all important					Very important
Colour	1	2	3	4	5	6
Leaves	1	2	3	4	5	6
Organic	1	2	3	4	5	6
Freedom from blemish and bruise	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Firmness of the stem	1	2	3	4	5	6
Free from soil	1	2	3	4	5	6
Free of wilting	1	2	3	4	5	6
Freedom of pest and disease	1	2	3	4	5	6
Favourable prior purchase	1	2	3	4	5	6
Size	1	2	3	4	5	6
Locally grown	1	2	3	4	5	6
Spinach is sold loose	1	2	3	4	5	6
Spinach is tied in bunches	1	2	3	4	5	6
Spinach is prepacked	1	2	3	4	5	6
Stem removed	1	2	3	4	5	6
Freedom of chemical residues	1	2	3	4	5	6
Variety	1	2	3	4	5	6
Value for money	1	2	3	4	5	6

23. Which of the following criteria in Question 22 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 22
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

24. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase fresh **spinach**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

25. On average, how often do you feel **unhappy** with the quality of **spinach** you have purchased from your preferred retail outlet with regard to the following desired outcome? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

26. What are the main reasons for your **dissatisfaction** with the quality of the **spinach** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

Do you buy **apples**?

YES Proceed to Question 27
NO Please go to Question 34 on page 19

27. Thinking specifically about **apples,** how often do you purchase **apples?**

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

28. Thinking specifically about **apples,** what criteria do you use in your decision to purchase fresh apples from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

29. With regard to **apples,** how important are each of the following criteria in your decision to purchase where 1 is “Not at all important” and 6 is “Very important”,

	Not at all important					Very important
Skin colour	1	2	3	4	5	6
Size/ shape	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Variety	1	2	3	4	5	6
Freedom from blemish and bruise	1	2	3	4	5	6
Freedom from pests and disease	1	2	3	4	5	6
Freedom from chemical residue	1	2	3	4	5	6
Firmness	1	2	3	4	5	6
Waxed	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Origin of the fruit	1	2	3	4	5	6
Fruit is prepacked	1	2	3	4	5	6
Label or brand	1	2	3	4	5	6
In-store tastings	1	2	3	4	5	6
Availability of product info in store	1	2	3	4	5	6
Newspaper advertising/ catalogues	1	2	3	4	5	6
Organic	1	2	3	4	5	6
Favourable prior purchase	1	2	3	4	5	6

30. Which of the following criteria in Question 29 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 29
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

31. On a scale of 1 to 6 where 1 is “Not at all important” and 6 is “Very important”, how important are EACH of the following criteria in your decision to purchase fresh **apples**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

32. On average, how often do you feel **unhappy** with the quality of **apples** you have purchased from your preferred retail outlet with regard to the following desired outcomes?

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

33. What are the main reasons for your **dissatisfaction** with the quality of the **apples** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

34. When you are **dissatisfied** with the quality of fresh fruit and vegetables you have purchased, what do you do? On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot" to what extent do you disagree/ agree with EACH of these statements:

	I disagree a lot					I agree a lot
I am always satisfied with my purchase	1	2	3	4	5	6
I throw them out	1	2	3	4	5	6
I change shops	1	2	3	4	5	6
I inform/ complain to the seller	1	2	3	4	5	6
I return it to the shop	1	2	3	4	5	6
I just eat it/ cook it	1	2	3	4	5	6
I stop buying	1	2	3	4	5	6
I am more selective the next time I buy	1	2	3	4	5	6
I purchase less	1	2	3	4	5	6
I do nothing	1	2	3	4	5	6
I change brands	1	2	3	4	5	6

35. On a scale of 1 to 6 where 1 is "Not at all confident" and 6 is "Very confident", how confident are you that the fresh fruit and vegetables that you consume are safe to eat? [Please circle ONE answer only]

Not at all confident Very confident

1	2	3	4	5	6

36. According to your response in Question 35, what factors lead you to conclude that the fresh fruit and vegetables that you buy are safe or not safe to eat?

a) …….
b) …….
c) …….
d) …….
e) …….

37. How confident are you of the Malaysian food system in terms of managing each of the following, where 1 is “Not at all confident” and 6 is “Very confident”,

	Not at all confident					Very confident
Organically produced food	1	2	3	4	5	6
Genetically modified fruits and vegetables	1	2	3	4	5	6
Chemical residues	1	2	3	4	5	6
Fair trade	1	2	3	4	5	6
Sustainable production	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Water pollution	1	2	3	4	5	6
Waste management	1	2	3	4	5	6
Conservation biodiversity	1	2	3	4	5	6
Animal welfare	1	2	3	4	5	6
Recycling packaging	1	2	3	4	5	6
Halal	1	2	3	4	5	6
Hormones, antibiotics and growth promotants	1	2	3	4	5	6
Functional foods/ probiotics	1	2	3	4	5	6
Microbial contamination	1	2	3	4	5	6

38. Have you ever avoided or boycotted a particular food product because you were concerned about food safety?

…….
…….
…….
…….
…….

39. Is your boycott usually on a temporary basis or permanent? What are the reasons for your boycott?

…….
…….
…….
…….
…….

And finally, a few questions about yourself:

40. Gender (Please circle ONE answer only):

1. Male
2. Female

41. Age (Please circle ONE answer only):

1. 18 – 25 years old
2. 26 – 34 years old
3. 35 – 44 years old
4. 45 – 54 years old
5. 55 – 64 years old
6. 65 and above

42. Marital status (Please circle ONE answer only):

1. Single
2. Married
3. Divorced/ widowed
4. Others: ……[Please specify]

43. Education level (Please circle ONE answer only):

1. Primary school
2. Secondary school
3. Diploma
4. First degree/ professional certificate
5. Postgraduate

44. Occupation: ……[Please specify]

45. Race (Please circle ONE answer only):

1. Malay
2. Chinese
3. Indian
4. Others:……[Please specify]

46. Including yourself, how many people live in your household? _____ people

47. Do you have any children under 18 living in your household? (Please circle ONE answer only):

1. Yes Proceed to Question 48
2. No Please go to Question 49

48.How many?

☐	Children aged less than 5 years old: _____ people.
☐	Children aged between 6 – 12 years old: _____ people.
☐	Teenagers aged between 13 – 17 years old: _____ people.

49.Your postcode area: …….[Please specify]

50. Your monthly income (for single); Your combined income (for married); Your spouse's income (for non-working individuals):

(Please circle ONE answer only):

1. Less than RM1,500
2. RM1,501 – RM3,000
3. RM3,001 – RM4,500
4. RM4,501 – RM6,000
5. RM6,001 – RM7,500
6. RM7,501 – RM9,000
7. RM9,001 and above.

Thank you for your kind response.

1. Introduction

1.1 Background of the study

Prior to independence in 1957, primary production played a significant role in the Malaysian economy (Kuruvilla 1995; Arshad 2007; Azima and Ismail 2009). Kuruvilla (1995) reported that the export of primary commodities, tin and rubber, accounted for 85.0% of export earnings and 48.0% of the Gross Domestic Product (GDP). At that time, the development of the agriculture sector was imbalanced, for British companies actively supported plantation agriculture (mainly rubber and other commercial crops), whereas the balance of the rural sector was neglected (Arshad 2007). As a result of the inequality in growth and income distribution, poverty among the rural population increased which required the government to make structural changes.

After independence, the Malaysian government started to develop the manufacturing sector to boost the national economy (Lim 1987; Rashid and Elameer 1999). The main objectives were: (1) to diversify its agriculture-based economy, given that the economy was too dependent on the export of rubber and tin products; (2) to improve unemployment by generating more employment opportunities; and, (3) to enhance a more even distribution of income (wealth).

In 1986, the government introduced an Industrial Master Plan (IMP) for the period from 1986 to 1995, to shift the export sector from low value raw materials to high value-added products (Hashim 1998). The second IMP, which covered the period from 1996 to 2005, further enhanced the growth momentum of the manufacturing sector by inviting greater involvement from small and medium-sized industries (Hashim 1998; Rashid and Elameer 1999).

As a result of structural changes to the Malaysian economy over the period of 1965 to 2005, the contribution that agriculture has made to the GDP and employment has continually declined (Table 1.1).

Table 1.1: Gross Domestic Product and employment by sector (1965 – 2005)

Sector	1965	1970	1975	1980	1985	1990	1995	2000	2005
Agriculture									
% of GDP	34.4	29.0	27.7	22.9	20.8	18.7	13.6	10.5	7.0
% of employment	54.6	53.5	49.8	39.7	35.7	26.0	18.0	13.1	12.9
Mining									
% of GDP	5.2	13.7	4.6	10.1	10.4	9.7	7.4	5.7	5.5
% of employment	2.5	2.6	2.2	1.7	1.1	0.6	0.5	0.5	0.4
Manufacture									
% of GDP	11.0	13.9	16.4	19.6	19.7	27.0	33.1	37.5	35.8
% of employment	8.4	8.7	11.1	15.7	15.1	19.9	25.9	28.9	28.7
Construction									
% of GDP	4.3	3.8	2.1	4.6	4.8	3.5	4.4	4.8	3.2
% of employment	3.5	2.7	4.0	5.6	6.9	6.3	8.3	9.3	7.0
Services									
% of GDP	45.1	36.2	49.2	40.1	43.6	42.3	44.2	45.7	48.5
% of employment	33.5	32.5	35.1	37.3	41.2	47.2	47.3	48.2	51.0

Source: adapted from Rashid and Elameer (1999), Malaysia (2001)

In 1965, the contribution that agriculture made to the GDP was 34.4%, which declined to 13.6% in 1995. The Seventh Malaysia Plan, which covers the period from 1996 – 2000, forecasts that the contribution agriculture will make to the GDP will decline still further to 10.5% in 2000 (Rashid and Elameer 1999). At the same time, Malaysia has experienced a marked reduction in the number of people employed in agriculture, with employment declining from 54.6% in 1965 to 18.0% in 1995. Conversely, the GDP for the manufacturing sector has increased more than three times over the period of 1965 to 2005.

Similarly, the service sector continues to expand both its share of the GDP and employment. Growth in the services sector is supported by strong growth in transport and communications, finance, insurance, real estate, business services, infrastructure, hotels and restaurants, government services, and the wholesale and retail trade (Al-Amin et al. 2007).

With strong economic growth, together with greater urbanisation, an increase in the level of personal disposable income and changes in the lifestyle of people, the need, preferences and the way in which Malaysian consumers purchase their food is changing. Today, more Malaysians are eating away from home, there is a greater

demand for convenience and a greater range of food is available in retail stores (Radam et al. 2006). Kamruddin et al. (2007) has observed that as the Malaysian population grows at 2.5% per annum, the increased demand for food has led to an increase in food imports.

Although the contribution that the agriculture sector makes to the national economy has steadily declined, the Malaysian government continues to regard the sector as strategically important (Dano and Samonte 2005). This is reflected by the policies that have been developed in the government's five year plans. In the Fourth Malaysia Plan, which covers the period from 1981 to 1985, the First National Agricultural Policy (NAP1) was launched to provide strategies and long-term plans towards developing and sustaining the agriculture sector. The Third National Agricultural Policy (NAP3), which covers the period from 1998 to 2010, was formulated during the Seventh Malaysia Plan. In relation to the food industry, the government is endeavouring to address the challenges of increasing food import bills through: (1) emphasising market demand and consumer preferences in order to meet the needs of domestic and global markets; (2) enhancing the production of high market value crops; (3) encouraging more investment by the private sector in large-scale farming, and (4) supporting research and development into new crops of commercial value (Dano and Samonte 2005; Othman et al. 2009).

According to the Malaysian Industrial Development Authority (MIDA), the Malaysian food industry is dominated by small and medium-sized enterprises in such areas as fisheries, livestock and fresh fruit and vegetables. Insufficient domestic food production has resulted in food imports becoming the major source of Malaysia's food supply (Warr et al. 2008). Among the major food imports are cereals, fish products, fruit and vegetables, sugar and honey, and meat (The Ninth Malaysia Plan 2006).

As a result of the high dependence on food imports, food quality and safety is emerging as a major issue. Quality is generally ranked as the most important criterion that influences the consumer's food choice (Prescott et al. 2002). In Malaysia, Shamsudin and Selamat (2005) report that more consumers are starting to shop at modern retail outlets because food products offered in these stores are

perceived to be of higher quality. Arshad et al. (2006) reveal that consumers who reside in urban areas have more purchasing power, are more health conscious, and are more demanding of quality. Between ethnic groups, Tey et al. (2008a) found that Chinese consumers were more willing to pay for higher-quality beef products than Malays or Indians. In another study, Tey et al. (2008b) revealed that quality influenced the consumer demand for products such as meat, fish, fruit and vegetables.

The quality demanded in fresh food products are also expected to increase in line with the population's growing income. Despite consumers' interest in purchasing higher quality food, Shamsudin and Selamat (2005) mentioned that Malaysian agricultural producers are not very quality-oriented, due to poor market signals and the lack of market incentives for high quality produce. In the Malaysian meat industry, there is a need for local producers to address technical and practical aspects of production and distribution in order to deliver safe, higher quality Halal meat products to consumers (Othman et al. 2009).

In relation to food safety, consumers in many countries have shown their concern towards the chemical and microbial safety of products such as meat (McCluskey et al. 2005; Krystallis and Arvanitoyannis 2006) and fresh fruit and vegetables (Baker 1999; Caswell 2000). In a local study conducted by Salleh et al. (2003), 35.0% of the fresh vegetables purchased from various wet markets around the Klang Valley were found to be contaminated with *Salmonellae*. Irrigation water, as well as the place of purchase, were possible sources of contamination.

According to Loureiro and Umberger (2007), origin is an important signal of food safety and quality. China is the leading exporter of fresh vegetables to Malaysia, followed by India, Thailand and Australia (Warr et al. 2008). From 1995 to 2006, Malaysian imports of vegetables from China have increased from USD80 million to USD200 million. The increasing import of food from China and other countries presents a potential risk to public health in Malaysia. For example, food imported from China often contains banned substances, antibiotics, preservatives and pesticides. Despite the warnings from Hong Kong and Singapore health authorities on the danger of importing food products produced in China, Malaysian authorities

have thus far failed to conduct more stringent checks on the safety and quality of imported food products. As a result of this, consumers' confidence in the level of food safety may be dampened (Selamat 2007).

Halal is another major concern for consumers, particularly in a Muslim country such as Malaysia. Shafie and Othman (2006) report that Muslim consumers place more importance on products which possess Halal label than products with ISO certification. Similarly, the findings of Rezai (2008) reveal that Malaysian consumers are more confident in consuming food which carries a local Halal label. Wan Omar et al. (2008) show that variables such as a certified Halal label, ownership of the business and knowledge about the food product ingredients have a positive impact on the consumers' attitude towards Halal food products.

Nevertheless, consumers in Malaysia often encounter negative experiences when purchasing food from retail outlets. For example, consumers were shocked by the news that chicken meat and pork meat were stored together in some supermarkets and chicken were being slaughtered by non-Muslims (Che Man and Selamat 2005). A number of cases have also been reported in the media where Halal logos have been manipulated. *Harian Metro* (2005) [cited in Rezai 2008] reported that a Muslim man found roast pork in a plastic bag, packed together with the chicken he had purchased from a retail store that carried a Halal logo from JAKIM. Upon investigation, it was found that the pork and chicken had been roasted in the same pit. Yatim (2008) reported that after discovering that two black chickens were not Halal (did not have their jugular veins and trachea properly severed), the shopper decided to sue Perak Duck Food Industries Sdn Bhd, CKL Marketing Sdn Bhd and Tesco Stores (M) Sdn Bhd because of negligence. Many food retailers and restaurant operators are operating under expired Halal quality assurance programs and other unregistered food manufacturers are using Halal logos to promote their businesses (Rezai 2008; JAKIM's website 2010). Consequently, these issues have the potential to undermine Malaysia's reputation as a global Halal food hub and to undermine the consumers' confidence in food companies and the relevant authorities.

Besides food safety and Halal, there are other product attributes such as freshness (Bonne and Verbeke 2006; Batt 2009), price (Batt 2004; Brunton 2009), label/brand (Sepulveda et al. 2008; Fernqvist and Ekelund 2009) and organic (McEachern and Schroder 2002; Yiridoe et al. 2005) which influence consumers' perception of food quality when purchasing fresh/chilled meat and fresh fruit and vegetables. Some of these attributes can be found in modern retail outlets (supermarkets and hypermarkets), whereas other attributes can be best obtained from traditional retail outlets (wet market/fresh market, farmers market, night market, wholesale market, and traditional grocery stores/mini markets).

Long before modern retail outlets were developed in Malaysia, consumers purchased their food items, as well as other household products, from traditional stores. Items such as fresh and packed food, cosmetics, household appliances, textiles, toys, books, cleaning products, furniture and much more are available from most modern retail outlets (Palau et al. 2006). Additionally, modern retail outlets are more capable of offering a competitive price (Arshad et al. 2006; Minten and Reardon 2008), higher quality products (Faiguenbaum et al. 2002; Minten et al. 2010), and convenience in terms of a one-stop shopping experience (Shamsudin and Selamat 2005; Ahmed et al. 2007). As a result, there is a growing expectation that more shoppers will purchase a greater proportion of the fresh food that they consume from modern retail outlets. Nevertheless, some consumers still prefer to purchase their fresh food from traditional vendors because of the good and friendly service provided (Goldman et al. 2002; Sinha and Banarjee 2004). Consequently, the criteria that consumers use in their decision to purchase fresh/chilled meat and fresh fruit and vegetables may influence their choice of retail store.

1.2 Research problems and objectives

The growth and expansion of modern retail formats in Malaysia, together with the rise in personal disposal income, changes in lifestyle and the increase of food safety awareness among consumers, provides the consumers in Malaysia with a greater choice of retail stores and quality attributes in making their decision to purchase fresh/chilled meat and fresh fruit and vegetables. The aim of this thesis is to understand the perceptions and experiences of Malaysian consumers in the Klang

Valley in purchasing fresh/chilled meat (chicken and beef) and fresh fruit and vegetables (potatoes, spinach and apples) from different retail stores.

The thesis will address each of the following research problems:

1. To gain an understanding of how consumers describe quality in purchasing fresh/chilled meat and fresh fruit and vegetables.

2a. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional outlet).

2b. To identify any significant difference in the importance of these quality cues by the place of purchase (modern retail outlet or traditional outlet).

2c. To segment respondents according to the importance of these quality cues in purchasing fresh/chilled meat and fresh fruit and vegetables by their preferred retail store.

3. To identify any significant difference in the quality of the fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional market).

4a. To gain an understanding of the quality cues that consumers look for in purchasing fresh/chilled meat and fresh fruit and vegetables.

4b. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables.

5a. To understand the relationship between perceived quality cues and quality attributes.

5b. To identify the relative importance of the quality cues on the desired quality attributes.

6. To identify any significant difference in the importance of the quality attributes consumers desire in purchasing fresh/chilled meat and fresh fruit and vegetables.

7a. To identify the extent to which consumers' expectations (quality cues and quality attributes) are fulfilled by consumption (experiential quality).

7b. To identify the extent to which consumers adjust their expectations in response to dissatisfaction.

With regard to the choice of retail stores, this study makes no distinction between supermarkets, department stores and hypermarkets in defining modern retail formats. The key criteria is that the retail store must be engaged in marketing fresh food, which also includes supermarkets, department stores and hypermarkets within a modern shopping mall. Based on this criteria, research will not explore attitudes and perceptions towards convenience stores and service stations such as 7-Eleven, given that fresh/chilled meat and fresh fruit and vegetables are seldom available from these stores.

This study focuses only on the way and the manner in which consumers exercise their choice when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. It is not a study of supply chain management or logistics nor does it seek to examine the implications of modern retail expansion on smallholder farmers. However, one of the reasons that people choose to shop either from modern retail outlets or traditional markets is the perceived difference in the quality of the product. While the logistics and distribution systems of both modern retail outlets and the traditional market are vastly different (Reardon et al. 2003), this study does not seek to explore differences in the performance or efficiency of the respective supply chains. It is more about exploring the reasons why people choose to purchase their fresh food from either a modern retail outlet or traditional markets.

1.3 Significance of the study

This research will be of interest to several groups. Firstly, the outcome of this research will assist the Malaysian food industry by providing new insights into the consumers' perceptions of food quality. Although much of the literature has focused on how to produce quality food from a business perspective, to improve quality in the food industry, more attention must be directed towards gaining a greater understanding as to how consumers perceive quality. Ultimately, consumers are the ones who decide the quality they want and expect in the food that they consume.

Additionally, most of the studies on this topic have been conducted in developed countries such as Europe and the United States. There is limited research which

focuses on food quality and consumer behaviour in developing countries such as Malaysia. This study is undertaken as an initial attempt to better understand the factors which most influence consumers purchasing decision in determining the quality of the fresh food purchased from different retail stores. The findings from this study, which involve consumer purchasing behaviour in a non-Western setting, will add to the extant literature.

The outcome of this research can be utilised by food manufacturers to narrow the gap that exists between business and the consumers. Quality is an important criteria consumers consider in their decision to purchase fresh/chilled meat (Becker 2000; Hoffman 2000) and fresh fruit and vegetables (Berdegue et al. 2005; Zenk et al. 2005; McKinna et al. 2007). Consumers consider such factors as freshness (Grunert et al. 2004; Rico et al. 2007), freedom from chemical residues (Wandel and Bugge 1997), taste (Grunert 2005), nutritional value (Torjusen et al. 2001), and food safety (Caswell and Mojduszka 1996; Burlingame and Pineiro 2007; Ong et al. 2008). The findings of this study could contribute to various marketing strategies for both modern and traditional retailers by providing an in-depth analysis of what consumers actually search for in making their decision to purchase fresh food from a retail store. Additionally, the insights from this research could be useful in facilitating new product development, improving product quality and differentiating food products from competitors.

Given that traditional retailers are facing challenges arising from the modernisation of the food retail industry, the findings of this study may provide some solutions for traditional retailers to revolutionize the way they manage their business operations. Furthermore, this study will provide information about the behaviour of Malaysian consumers when purchasing fresh food which may be important for international retailers in expanding their business within Malaysia.

For the food quality authorities in Malaysia, this research may assist in establishing standards to improve food quality and food safety education. The food quality and food safety system in Malaysia is complex, with many different authorities including the Food Quality Division of the Ministry of Health, the Department of Agriculture, the Federal Agricultural Marketing Authority, the Ministry of

International Trade and Industry, and the Standard and Industrial Research Institute of Malaysia (SIRIM) being in some way responsible for food quality.

1.4 Outline of the thesis

This thesis is comprised of twelve chapters. The current chapter introduces the background, objectives and significance of this study.

Chapter Two provides an overview of the agriculture and food industry, food retailing and the food service industry in Malaysia.

Chapter Three presents an extensive review of the literature on consumer behaviour and perceived quality. In reviewing the literature, the following topics are addressed: the importance of understanding consumer behaviour, consumers' involvement in food products, consumer motivations and several consumer behaviour models. A conceptual framework is then developed from the literature to guide this study.

Chapter Four is divided into two parts. Part One reviews the modernisation of the food retail industry, which focuses on the emergence of supermarkets and hypermarkets in Malaysia. Part Two discusses the factors which are believed to influence the consumers' decision to purchase food from either a modern retail outlet or a traditional market.

Chapter Five describes the preliminary research methodology. The discussion includes the design of the survey instrument and data collection through focus group interviews.

Chapter Six presents the preliminary research findings collected from four focus group interviews. This chapter focuses on the variables which were found to influence the consumers' choice of retail store when purchasing fresh/chilled meat and fresh fruit and vegetables.

Chapter Seven discusses the main research methodology employed in this study. The discussion is divided into several sections: (1) sampling design process (defining the target population, determining the sampling frame, selecting a sampling technique, and determining the sample size); (2) questionnaire design; (3) translation procedure and pilot testing the questionnaire; (4) data collection; and (5) the data analysis techniques (univariate and multivariate).

A description of the respondents interviewed will be presented in Chapter Eight.

Chapter Nine will be presented in several parts. The first part will focus on the various factors that influence the consumers' decision to purchase fresh/chilled meat from either a modern retail outlet or a traditional market, whereas, in the second part, the various factors that influence their decision to purchase fresh fruit and vegetables from either a modern retail outlet or a traditional market will be explored. In Part Three, the results will be compared and contrasted.

Chapter Ten presents the results of the criteria consumers use in their decision to purchase fresh/chilled meat (chicken and beef). The manner in which respondents react when they are dissatisfied with the quality of the fresh/chilled meat they have purchased will be discussed. The final section of the chapter will focus on the similarities and differences consumers use when purchasing both meat products.

Chapter Eleven is similar to Chapter Ten, except that the discussion focuses on the criteria consumers use in their decision to purchase fresh potatoes, fresh spinach and fresh apples from a retail store.

Chapter Twelve, which is the final chapter, concludes by addressing the research objectives of this study. The chapter discusses the limitations experienced by the researcher, together with possible directions for future research.

2. An overview of the food industry in Malaysia

2.1 Chapter outline

This chapter will provide an overview of the food industry in Malaysia. The chapter begins with a brief overview of the agriculture industry in Malaysia as a whole, followed by an examination of the sub-sectors which are related to this research project (the livestock industry and the fresh fruit and vegetable industry). Before discussing the food retail industry in Malaysia, a brief overview of the current food marketing and distribution system will be provided. Through an examination of demographic and socio-economic variables, consumer trends and their impact on the food marketing and distribution system in Malaysia will be explored. A summary is presented at the end of the chapter.

2.2 An overview of the agricultural industry in Malaysia

The Malaysian gross domestic product (GDP) continues to grow which is indicative of strong economic growth. In 1970, the Malaysian GDP was reported to be worth RM48 billion (Table 2.1).

Table 2.1: Malaysian Gross Domestic Product (GDP) by industry

Sector	1970	1980	1990	2000	2005	Average Annual Growth Rate 2001-2005
Gross Domestic Product (in RM billion)	RM48	RM56	RM73	RM211	RM262	4.5
Agriculture, forestry, livestock and fisheries	29.0	22.9	18.7	8.9	8.2	3.0
Mining and quarrying	13.7	10.1	9.8	7.3	6.7	2.6
Manufacturing	13.9	19.6	26.9	31.9	31.4	4.1
Construction	3.8	4.6	3.6	3.3	2.7	0.5
Services	39.6	42.7	41.1	48.6	50.9	6.1

Source: Malaysia 2006.

In 2000, the Malaysian GDP had grown to RM211 billion and by 2005 had reached RM262 billion. On average, the GDP has increased at an annual growth rate of 4.5%.

Historically, agriculture has played a significant role in the Malaysian economy. In 1970, the contribution that the agricultural sector made to the Malaysian GDP (29.0%) far outweighed the contribution made by the manufacturing sector (13.9%). However, over many years, the Malaysian economy has undergone major structural change, where the contribution made by the manufacturing and service industry to the Malaysian GDP is larger than the contribution made by agriculture. In 2005, the service industry contributed 50.9%, followed by the manufacturing sector at 31.4%, whereas agriculture contributed only 8.2% (Malaysia 2006).

Although the contribution that the agricultural sector makes to the Malaysian GDP is small, during the period from 2001-2005, the value of agriculture increased from RM18.7 billion to RM21.6 billion (Table 2.2).

Table 2.2: Value added of agriculture and agro-based industry

Commodity	In RM billion	
	2000	2005
Agriculture	18.7	21.6
Industrial Commodities	11.0	13.3
Food Commodities	7.6	8.3
Agro-based industry	13.5	16.9
Total Agriculture and agro-based industry	32.2	38.5

Source: Department of Statistics and Economic Planning Unit. Adapted from Malaysia 2006.

Furthermore, agriculture continues to be a significant export earner for the country (Table 2.3).

Table 2.3: Agriculture and agro-based manufactured export

Commodity	%	
	2000	2005
Agriculture exports	48.1	50.0
Industrial commodities	38.7	42.1
Food commodities	9.4	7.9
Agro-based manufactured exports	51.9	50.0
Total agriculture and agro-based exports	100.0	100.0

Source: Department of Statistics and Economic Planning Unit. Adapted from Malaysia 2006.

The major commodities which have contributed to the value of agricultural exports include palm oil, rubber and sawn timber. According to the Malaysian Industrial Development Authority (MIDA), the major food products exported by Malaysia to other countries include cocoa, fisheries products, margarine and shortening.

Chong (2007) described agriculture in Malaysia as having a dualistic production structure. On one side, the primary commodities (palm oil and rubber) operate efficiently as large-scale plantations. However, on the other side, small-scale food crop producers (paddy, fruit and vegetables) are not internationally competitive. Arshad and Hameed (2007) reveal that aside from paddy, other food commodities have not received sufficient support from government.

Given that industrial commodities comprise the greatest share of the Malaysian agricultural industry, the country is highly dependent on food imports (Table 2.4).

Table 2.4: Imports of food by Malaysia

Commodity	RM million		% of total	
	2000	2005	2000	2005
Feeding stuff for animals	1,928.4	2,838.2	18.3	18.4
Cereal and cereal preparations	1,839.1	2,267.1	17.4	14.7
Fisheries product	1,085.8	1,851.9	10.3	12.0
Others	917.3	1,779.6	8.7	11.5
Dairy products	1,176.5	1,745.1	11.2	11.3
Vegetables	1,023.6	1,620.2	9.7	10.5
Sugar, sugar preparations and honey	1,085.2	1,406.0	10.3	9.1
Meat and meat preparations	771.4	1,054.6	7.3	6.8
Fruits	561.6	694.9	5.3	4.5
Live animals	154.6	177.4	1.5	1.1
Total	**10,543.5**	**15,435.0**	**100.0**	**100.0**

Source: Department of Statistics and Ministry of Agriculture and Agro-based industry. Adapted from Malaysia 2006.

In 2005, beside animal feeds, 14.7% of the total value of food imports were for cereal and cereal preparations, 12.0% were for fisheries products, 11.3% were for dairy products and 10.5% were vegetables.

In 2005, Malaysia was self-sufficient in poultry (122.0%), fruit (117.0%), eggs (113.0%) and pork (107.0%) (Table 2.5).

Table 2.5: Self-sufficiency levels in food commodities (%)

Commodity	2000	2005	2010[e]
Rice	70	72	90
Fruits	94	117	138
Vegetables	95	74	108
Fisheries	86	91	104
Beef	15	23	28
Mutton	6	8	10
Poultry	113	121	122
Eggs	116	113	115
Pork	100	107	132
Milk	3	5	5

Source: Ministry of Agriculture and Agro-Based Industry and Malaysia 2006.
Notes: [e] estimated

However, Malaysia was a net importer of rice, fresh vegetables, fish and fish products, dairy products, beef and mutton. In 2008, Malaysia imported food products worth more than RM28 billion (Malaysian Industrial Development Authority n.d.).

According to Mohayidin et al. (2007), the Malaysian government is concerned by the increasing trend in the value of imported food due to the fact that the country has a vast amount of natural resources, which are capable of producing sufficient food to meet the demands of the national population. Consequently, the government has sought to revitalise the sector as the third engine of growth during the Ninth Malaysia Plan 2006-2010 (Malaysia 2006). The strategies outlined under the theme 'New Agriculture' emphasise the development of food production, through:

1. increasing agricultural production

This will be achieved through: (1) supporting the existing food commodity subsector; (2) new sources of growth; (3) new land development, and (4) enhancing productivity. Under the Green Book Programme, the government plans to improve the level of self-sufficiency for paddy, fruit and vegetables, fish and the livestock industry to meet the demands of the domestic population. The Green Book Programme introduces the concept of backyard farming and community farming,

whereby society is encouraged to plant their own fruit and vegetables, and to rear chickens or fish for their own consumption (Syed Ali n.d.).

The ‘New Agriculture’ programme will also attempt to develop new sources of growth, in areas such as tuna and herbs. To reduce the risks and to expand food exports, sanitary and phytosanitary (SPS) measures will be introduced to eradicate specific pests and diseases and to establish disease-free zones.

Considering the global potential of the Halal market, the production of Halal food, which includes the processing and packaging of meat, fisheries products and other food-based products, will be promoted. Financial institutions will be encouraged to provide credit facilities for small and medium-sized enterprises who wish to invest in any food related agricultural activities.

Through large-scale production and precision farming systems, new production zones for industries such as fruit, vegetables, livestock and aquaculture will be established. For paddy, farmers will be encouraged to cultivate high quality paddy varieties. Any land that is not utilised for paddy will be used to plant other crops for the purpose of self consumption or to produce marketable crops to provide a better income.

Among the steps that will be implemented to enhance productivity is the adaptation of advanced technologies and the utilisation of new equipment and machinery. In order to support this effort, special training and adequate technical assistance will be provided to farmers.

2. expanding agro-based processing activities and product diversification

Here, the main focus will be on the production of high value-added products. Biotechnology will be applied to various sub-sectors of the agriculture industry, particularly through the production of higher yielding crops and better animal breeds. Biotechnology can assist with the development of crop varieties with higher yield capacity; disease resistant food crops, which will minimise the use of pesticides, herbicides, antibiotics and other chemicals that may impact on the environment; and produce higher quality products for export markets (Yusoff

2007). For example, with the usage of biotechnology in the cocoa industry, high quality cocoa varieties that are more resistant to disease, have a higher cocoa butter content and improved cocoa flavour will be produced. Yusoff (2007) also mentioned that biotechnology was important for the livestock and aquaculture industry to increase production through the manipulation of growth traits, feed development, the prevention of diseases and a general improvement in health.

A food valley hub will be established in the Klang Valley as a centre of excellence for biotechnology-based food production and processing, which is hoped will attract participation and strengthen the collaboration between local universities, government research and development institutions such as the Malaysian Agricultural Research and Development Institute (MARDI) and the private sector.

Given that Malaysia has strong credentials in Halal certification, the government plans to develop Malaysia as a regional hub for Halal food production. Greater attention will be given to promote food quality and safety for Halal food products.

At the same time, Malaysia plans to invest in more convenient and functional foods, such as ready-to-use seafood, processed livestock products, convenience vegetable meals and high fibre products to meet changing consumption patterns and greater awareness of healthier lifestyles among Malaysian consumers.

3. strengthening marketing and global networking

The Federal Agricultural Marketing Authority (FAMA) is responsible for facilitating contract farming operations between small scale producers and wholesalers, hotels and retailers (supermarkets and hypermarkets). With the establishment of new collection and distribution centres, also known as National Food Terminals (TEMAN), the collection, grading and marketing of local agricultural produce will be improved. Through farm accreditation schemes and product standardisation, food products will be marketed to meet international requirements with assistance from FAMA. The Malaysian Quarantine and Inspection Services (MAQIS) is responsible for ensuring that all imported food complies with the national food safety standard. The Malaysia External Trade

Development Corporation (MATRADE) is in charge in marketing and promoting agro-food based products for potential export markets.

4. improving the service delivery system

FAMA will work together with the National Agriculture and Food Corporation (NAFC) to facilitate the marketing of agricultural products from small scale farmers. NAFC will concentrate on the marketing and distribution of agriculture produce and agro-based products on a larger scale.

5. enhancing incomes for farmers, small holders and fishermen

Under the Integrated Agricultural Development Project (IADP), paddy farmers will be encouraged to participate in group farming activities, as well as food processing activities. It is estimated that the average income of 25,000 paddy farmers will increase by joining this programme. In order to improve the income of fishermen, they will be encouraged to adapt fish-farming and fisheries-based processing activities. The income of livestock farmers is expected to increase through contract farming.

Throughout the period of the Eighth Malaysia Plan (2001-2005), the production of food commodities recorded positive growth as a result of the aggressive implementation of programmes and projects to increase food production and exports (Malaysia 2006) (Table 2.6).

Overall, each sub-sector in the food industry, except for pepper, recorded positive growth. In the livestock industry, mutton recorded the highest growth (average 10.8% per annum), while beef production rose by 10.2% per annum. Rearing cattle and goats on palm oil and rubber plantations, together with investments by the private sector in feedlot cattle rearing, contributed to the development. Although poultry has not met the targeted growth rate, the industry has been able to meet the domestic demand. Despite the outbreak of avian bird flu in 2003, the poultry industry remained strong through an expansion in the application of closed-house systems (Malaysia 2006).

Table 2.6: Production of food commodities during the Eight Malaysia Plan 2001 – 2005

Food Commodities		Average Annual Growth Rate (%)	
		Targeted	Achieved
	Paddy	0.2	2.3
Fisheries	Marine	5.9	0.6
	Aquaculture	18.3	8.3
Livestock	Beef	18.0	10.2
	Mutton	11.0	10.8
	Pork	6.6	5.5
	Poultry	4.7	2.1
	Milk[1]	8.9	6.9
Others	Pepper	5.9	- 4.5
	Pineapple	2.0	8.9
	Tobacco	13.6	13.6
	Flowers[2]	3.3	1.0
	Fruits	3.1	9.8
	Vegetables	0.6	13.8
	Coconut	0.6	4.8

Source: Ministry of Agriculture and Agro-Based Industry and Ministry of Plantation Industries and Commodities. Adapted from Malaysia 2006.
Notes: [1] measured in million litres.
[2] measured in million stalks.

The fruit and vegetable industry has also experienced positive growth. An expansion in the area cultivated, the implementation of intensive estate-based activities, higher productivity from good farming practices and improvements in post-harvest handling have all contributed to the growth (Malaysia 2006).

2.2.1 The livestock industry

In the period of the Eighth Malaysia Plan (2001-2005), the livestock industry grew at the rate of 6.6% per annum (Mohamed 2007). According to Kaur and Arshad (2007), in 2003, poultry farming contributed about 55.4% to the value of livestock production, followed by eggs (20.4%), pork (16.7%) and beef (5.8%). Although the contribution that the livestock industry made to the national economy in 2000 was relatively small (8.1%), the industry has been steadily expanding. With the development of Beef Valley, the livestock industry is expected to contribute around 9.0% to the GDP for agriculture and food production during the period of the Ninth Malaysia Plan (2006-2010).

The livestock industry in Malaysia is divided into two main sectors; the ruminant and non-ruminant sector. The ruminant sector consists of beef cattle, dairy cattle, buffaloes, sheep and goats. This sector is considered important as it supplies the Malaysian population with high quality red meat and raw materials for the meat processing industry. Despite the priority given by the government to further enhance this sector, it continues to lag behind in terms of technology and production.

The non-ruminant sector consists of poultry (broilers and layers) and swine. In Malaysia, the poultry industry consists of chickens and ducks, with chickens consistently accounting for 94.0% of poultry population (Kaur and Arshad 2007). Unlike the ruminant sector, the non-ruminant sector has shown excellent growth. Factors such as a liberal import policy on high quality breeds, effective restrictions on the import of broiler meat, and the adoption of modern innovations in farming systems by both private or public limited companies have contributed to the development (Kaur and Arshad 2007; Mohamed 2007).

In 2005, beef production reached 38,700 tonnes which was expected to increase to 58,600 tonnes in 2010 (Mohamed 2007). However, given that the growth rate in beef cattle production is slow, and the beef cattle population is small, the level of self-sufficiency in beef is likely to reach only 28.0% in 2010 (Malaysia 2006).

In contrast, the poultry sector is the largest component of the livestock industry. In 2003, poultry accounted for 80.9% of the total meat produced, followed by pork (16.6%), beef (2.4%) and mutton (0.1%) (Ministry of Agriculture 2005). The poultry industry has not only managed to meet the local demand for chicken, but is also a net exporter of meat and eggs to Singapore and Japan (Mohamed 2007). In 2003, the level of self-sufficiency for poultry was 103.6% (Ministry of Agriculture 2005). By the end of 2010, the level of self-sufficiency for poultry is estimated to reach 122.0% (Malaysia 2006).

In 2003, poultry consumption exceeded 752,000 tonnes (Mohamed 2007). The consumption of poultry, particularly chicken, is high due to the general acceptance of chicken meat among the population, for there are no religious taboos associated

with its consumption (Kaur and Arshad 2007). Furthermore, as compared to all livestock products, including fish, poultry is the cheapest source of animal protein, which also explains the higher consumption (Table 2.7).

Table 2.7: The average retail prices of livestock products and fish in Peninsular Malaysia (RM/kg)

Year	Beef	Mutton	Poultry	Pork	Fish
1998	11.30	13.10	3.80	6.70	9.90
1999	11.40	13.20	3.90	6.80	10.20
2000	11.60	13.40	3.80	6.70	10.80
2001	14.80	18.40	5.20	6.70	9.80
2002	14.70	18.50	4.90	6.70	11.20

Source: Ministry of Agriculture and Agro-Based Industry 1995; 2004. Adapted from Mohamed 2007.

According to Mohamed (2007), the demand for beef is expected to further increase and to reach 310,000 tonnes by 2020. Factors such as good economic growth, population growth, as well as an increase in the price of fish were mentioned among the reasons for the increase in beef consumption.

2.2.2 The vegetable industry

The vegetable industry in Malaysia is comprised of a diverse group of crops. According to the Department of Agriculture [cited in Chong 2007], more than 50 different types of vegetables, ranging from leafy, fruit, root and cash crops, and spices are cultivated. Vegetables are grown for both fresh consumption and for processing. Nevertheless, the industry can best be described as small and fragmented (Chong 2007). In 2005, only 64,000 hectares were planted in vegetable crops compared to other crops such as palm oil (4,049,000 ha), rubber (1,250,000 ha), paddy (452,000 ha) and fruit (330,000 ha) (Malaysia 2006).

Despite the small market share, organic production has been identified as the fastest growing sub-sector in the vegetable industry (Chong 2007). Furthermore, the government is encouraging small-scale producers to venture into organic farming by increasing the area under production, providing better infrastructure, and introducing attractive credit schemes under the Malaysia Organic Scheme (SOM).

Overall, vegetable production has shown positive growth over the period from 2000 to 2004 (Table 2.8).

Table 2.8: Production of selected vegetables

Production ('000 tonnes)	2000	2003	2004	2005	2006
Vegetables	405	547	587	547	560
Cash crops (maize, groundnuts, yam)	86	109	119	109	112
Spices (hot chilli, ginger, lemon grass)	21	24	20	26	45
Total	512	680	725	682	717

Source: Ministry of Agriculture and Agro-Based Industry 2006. Adapted from Chong 2007.

Nevertheless, according to the Ministry of Agriculture and Agro-Based Industry (2006), Malaysia continues to experience a negative trade balance (Table 2.9).

Table 2.9: External trade of vegetables (RM'000)

Category	1998	2000	2003	2004	2005
Exports	205,934	278,411	393,734	462,785	504,497
Imports	986,844	1,023,596	1,172,404	1,518,455	1,654,582
Trade balance	- 780,910	- 745,185	- 778,670	- 1,055,670	- 1,150,085

Source: Ministry of Agriculture 2006. Adapted from Chong 2007.

From Malaysia, fresh vegetables are exported to Singapore. The major vegetables exported are choy sum, cabbage, cucumber, long bean, chilli and tomatoes (Ministry of Agriculture and Agro-Based Industry 2006).

Conversely, Malaysia imported garlic, potatoes, carrots and turnips, onions, cabbages, cauliflowers, broccoli, ginger and dried chillies from China worth more than RM680 million (Table 2.10).

Imports of onions, potatoes and spices from India accounted for about 14.0% of the imported vegetables. Thailand supplied onions, cabbages and tomatoes; Australia supplied carrots and turnips, tomatoes, celery, lettuce, potatoes and capsicums; the USA supplied predominantly potatoes; New Zealand supplied onions and frozen

vegetables; and Indonesia exported cabbages and potatoes. In 2006, the level of self-sufficiency for vegetables was estimated to reach only 58.0% (Rahim 2007).

Table 2.10: Malaysia vegetable imports, 2006

Country	2006	
	RM	%
China	680,533,949	43.0
India	217,117,643	14.0
Thailand	127,083,235	8.0
Singapore	126,756,900	8.0
Myanmar	98,787,611	6.2
Australia	94,957,680	5.9
Other countries	75,525,744	4.7
United States of America	66,942,999	4.2
Netherlands	39,723,666	2.5
New Zealand	33,815,655	2.1
Indonesia	22,306,762	1.4
Total	1,583,551,844	100.0

Source: Federal Agricultural Marketing Authority 2007. Adapted from Rahim 2007.

In 2005, it was estimated that the per capita consumption of onions (6.3kg) was the highest for the vegetable group, followed by potatoes (5.5kg) (Table 2.11).

Table 2.11: Estimated consumption of vegetable varieties in Malaysia for 2005

Product	Kg/year
Onions	6.3
Potatoes	5.5
Cabbages and other brassicas	3.7
Tomatoes	3.5
Garlic	2.6
Mushrooms and truffles	2.3
Carrots and turnips	2.2
Cucumbers and gherkins	1.5
Cauliflowers and broccoli	1.1
Sweet potatoes	0.8
Lettuce and chicory	0.2
Spinach	n.a

Source: Adapted from Mohayidin et al. 2007.

According to the Federal Agricultural Marketing Authority [cited in Rahim 2007], the per capita consumption of vegetables is expected to increase from 42kg in 2005 to 51kg in 2015.

2.2.3 The fruit industry

Traditionally, fruit growing in Malaysia is considered as a secondary activity by smallholder farmers to supplement their household income. However, over many years, large fruit plantations have developed to meet the increasing local demand and that of the export market.

The Malaysian fruit industry is made up of tropical and temperate fruits. Despite the slow growth in the fruit industry compared to other industrial commodities such as palm oil, rubber and cocoa, during the financial crisis in 1997/1998, the fruit industry greatly assisted the Malaysian economy by reducing the food import bill by increasing export earnings (Arshad and Hameed 2007).

Not unexpectedly, the production of fruit crops in Malaysia is more focused on the production of tropical fruits (Table 2.12).

Table 2.12: The production of selected major fruits by types in Malaysia (tonnes)

Type of fruits	2000	2004
Durian	306,477	399,661
Banana	178,958	317,104
Pineapples	265,682	196,690
Watermelon	72,360	115,881
Rambutan	33,866	78,949
Cempedak	25,771	45,454
Papaya	23,117	40,330
Mango	14,967	27,075
Mangosteen	16,986	24,392
Guava	11,674	24,179
Jackfruit	9,588	18,002
Starfruit	8.571	10,971
Pamelo	6,196	8,913
Total	974,213	1,283,231

Source: Federal Agricultural Marketing Authority 2002; Department of Agriculture 2006. Adapted from Arshad and Hameed 2007.

Durian is the major fruit crop produced in Malaysia, followed by banana, pineapple and watermelon. However, in terms of the percent share of the different fruit crops exported from Malaysia, durian came third at only 8.8% after papaya (33.7%) and

watermelon (22.7%) (Department of Agriculture 2006). Competition from durian producers in Thailand and Indonesia, as well as price fluctuations in the export market were identified as the main factors leading to the decline in the export of durian (Arshad and Hameed 2007). On the other hand, Malaysian papaya have been accepted worldwide. Malaysia is the world's second largest exporter of papaya after Mexico (FAO 2007). According to Arshad et al. (2005), Malaysia is the ninth largest producer of tropical fruit in the world.

In 2005, it was estimated that the per capita consumption of bananas approached 20kg and pineapples 11.9kg (Table 2.13).

Table 2.13: Estimated consumption of fruit varieties in Malaysia, 2005

Product	Kg/year
Bananas	20.0
Pineapples	11.9
Oranges	3.9
Apples	3.4
Guavas, mangoes and mangosteens	3.3
Tangerines and mandarins	2.7
Papayas	1.0
Grapes	1.8
Dates	0.6
Grapefruit	0.3
Other citrus	0.2
Lemons and limes	0.2

Source: Adapted from Mohayidin et al. 2007.

Conversely, the consumption of temperate fruits, which included oranges (3.9kg) and apples (3.4kg), were significantly lower. According to the Food and Agriculture Organisation (FAO) (2007), the per capita consumption of fruit in Malaysia is expected to increase from 56kg in 2002 to 72kg in 2010. The increase in fruit consumption is expected to arise from an improvement in the standard of living and growing health concerns (Arshad and Hameed 2007). However, the per capita consumption of fruit in Malaysia is still considered low compared to Germany (136kg), the USA (103kg), Australia (97kg) and the UK (81kg) (FAO 2007).

Oranges and apples continue to account for the greatest share of the value of temperate fruit imported into Malaysia (Table 2.14).

Table 2.14: Imports of temperate fruits by Malaysia, 2004

Type of fruits	2004	
	Value ('RM)	Ratio (%)
Oranges	80	22
Apples	69	19
Dates	49	14
Grapes	49	13
Others	46	13
Pears	38	10
Mandarins	34	9

Source: Ministry of Agriculture and Agro-Based Industry. Adapted from Arshad and Hameed 2007.

Arshad and Hameed (2007) estimate that the import value of temperate fruit will increase in the future due to factors such as an increase in population and disposable income, changes in consumers' lifestyle, and the inconsistent and unstable supply of tropical fruit.

China was the main supplier of imported fruit to Malaysia (28.3%) (Table 2.15). Fruit imported from China included mandarins and preserved fruits.

Table 2.15: Malaysia fruits import, 2006

Country	2006	
	RM	%
China	149,460,778	28.3
United States of America	99,282,970	19.0
Other countries	54,355,783	11.4
Thailand	60,004,144	11.2
South Africa	46,961,970	9.0
Australia	40,550,932	7.7
Indonesia	21,613,438	4.1
Iran	19,123,846	3.6
India	13,516,369	2.6
Chile	8,693,690	1.6
Egypt	8,088,688	1.5
Total	527,417,530	100.0

Source: Federal Agricultural Marketing Authority 2007. Adapted from Rahim 2007.

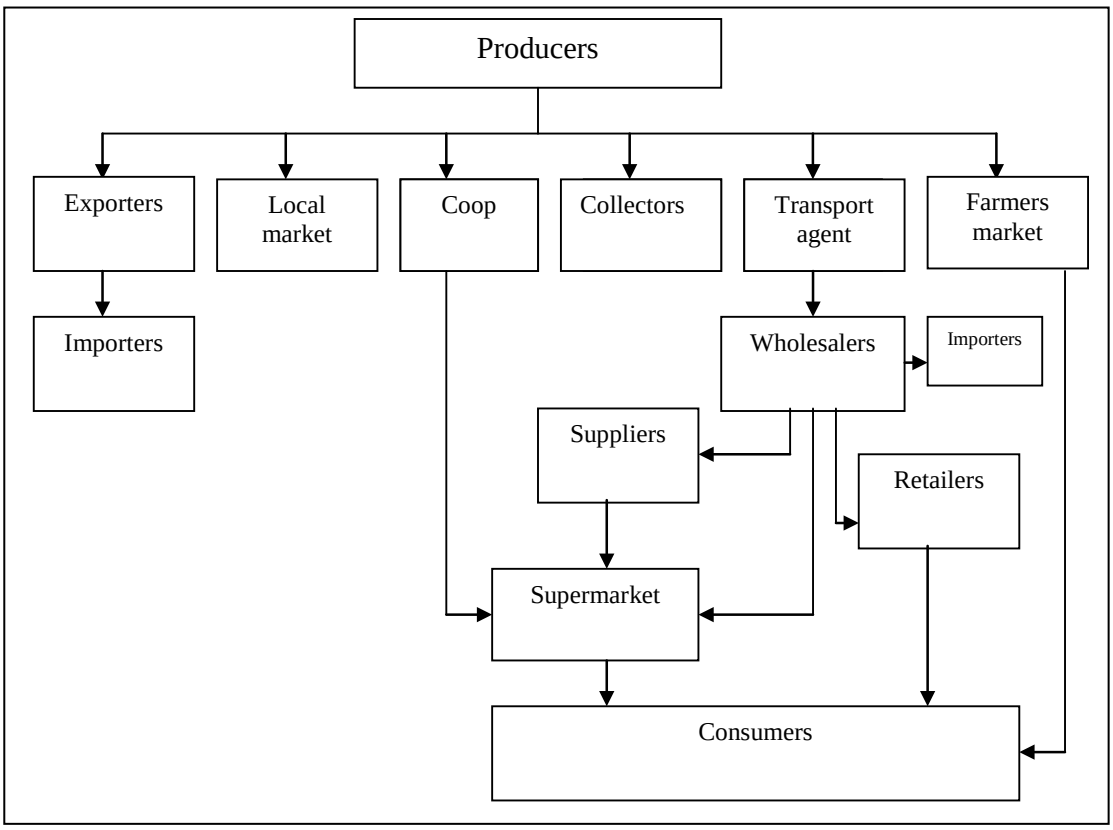
Some 19.0% of the imported fruit came from the USA, which consisted of apples and oranges. Tropical fruits such as durian, mango, lychee and rambutan were mainly imported from Thailand (11.2%).

2.3 An overview of the marketing and distribution of food products

The marketing system for fresh food must ensure that the product meets the consumers' expectations in terms of freshness and quality, together with the other preferences they desire. Agricultural products in Malaysia are marketed and distributed mainly through the private sector (87.0%), while the remainder is managed by the government sector (Rahim 2007).

The marketing and distribution of food products involves a multi-channel distribution system. The marketing channel for fresh fruit and vegetables begins at the farm level. From here, agricultural products are assembled by collector agents to be transported to collection centres and subsequent distribution to wholesalers and retailers. Rahim (2007) revealed that more than half (65.0%) of the fresh fruit and vegetables sold in Malaysia were marketed through wholesalers, while 35.0% were marketed directly to modern retailers, exporters, processing centres or through direct sales to consumers (farmers' markets) (Figure 2.1).

Figure 2.1: Marketing channel for fruit and vegetables in Malaysia



Source: Federal Agricultural Marketing Authority 2005 (Rahim 2007).

The drawbacks of a multi-channel distribution system include; (1) the high marketing cost, (2) high marketing margins, where growers receive the least benefit, and (3) high post-harvest losses, as a result of poor handling in storage and transportation.

In 2006, it was reported by FAMA [cited in Rahim (2007)] that there were a total of 25 wholesale markets and more than 300 retail market centres throughout Malaysia. FAMA also reported an increase in the number of modern retailers involved in selling fresh fruit and vegetables. At the same time, the government was upgrading the infrastructure in most farmers' markets and wet markets to encourage growers to be directly involved in the marketing and distribution of their fresh produce to consumers (Malaysia 2006; Rahim 2007). According to FAMA, there were about 245 farmers' markets in Malaysia in 2006, which accounted for sales worth more than RM300 million.

2.4 Food retailing in Malaysia

Food distribution channels in Malaysia can be divided into two broad categories: the old and the new. Different channels cater for different segments of the Malaysian population. The old format consists of traditional markets and grocery stores also known as mini-markets. The traditional market, which comprises wet markets, fresh markets, night markets or farmer's markets, are popular among consumers when purchasing fresh food.

The traditional market has been defined as a market with little central control or organisation, that lacks refrigeration and does not process fresh foods into branded goods for sale (Trappey and Lai 1997). Goldman et al. (1999) described a typical wet market as an agglomeration of small vendors, where each vendor specialised in one fresh food line (meat, fish, fruit or vegetables) or sub line (fruit and vegetables). Traditional retailers complement each other as they collectively offer a full assortment.

A fresh market and/or a wet market in Malaysia generally occupies one or two floors of a building that is located adjacent to a housing area where there is a high

population density and high traffic flow. The ground floor is normally rented to retailers who sell fresh food or ready-to-eat items. The upper level is occupied by retailers who sell ready-to-eat items or non-food products. The night market and farmer's markets are usually a street market. Here, retailers normally set up their own stalls along the roadside. These traditional markets provide opportunities for self-employment, as well as improving the level of income for small traders, farmers and young entrepreneurs (Malaysia 2001; Malaysia 2006).

Grocery stores or mini-markets emerged at the same time as the traditional markets. These stores are family-owned retailers that sell a limited variety of products such as fish, fruit and vegetables, bread and milk, stationery, toys and household supplies. Consumers prefer to shop at these stores given that the location is close to their house or place of work. However, consumers may limit their purchase from these stores due to the high prices and limited product lines. Furthermore, while these old retail formats still comprise around 25.0% of all retail sales in Malaysia (Shamsudin and Selamat 2005), the number of stores in the traditional retail food market is rapidly decreasing.

In the past, selecting their preferred retail store was seldom a problem for most Malaysian shoppers as there were few other stores available besides the traditional retail formats. According to Roslin and Melewar (2008), in the 1970's and 1980's, local sundry shops dominated the retail market in Malaysia. However, with the expansion of modern retail outlets, consumers can choose which retail format to visit depending on those factors that they perceive to be important.

According to McTaggart (1969) [cited in Roslin and Melewar (2008)], the development of modern retail outlets in Malaysia can still be considered to be relatively new. The Weld Supermarket was the first modern supermarket to be opened in Kuala Lumpur in 1963, and was initially built to cater for expatriates who were working and living in the city. During the 1970's, modern supermarkets started to expand with the entry of several foreign ventures into Malaysia. By 1984, Zainal Abidin (1989) [cited in Roslin and Melewar (2008)] was describing the 'supermarket war' in Malaysia.

The new emerging retail formats are hypermarkets, supermarkets and convenience stores. Generally, retailers are being differentiated on the basis of their retail size (Roslin and Melewar 2008). According to the Ministry of Domestic Trade, Co-operatives and Consumerism, hypermarkets are defined as those retail stores with a floor space in the range of 60,000 to 100,000 sq. ft (Zainal Abidin 1989; Roslin et al. 2002; Roslin and Melewar 2008). Supermarkets are classified as having a floor space ranging from 8,000 to 50,000 sq. ft.

Cheeseman and Wilkinson (1995) described supermarkets as self-service stores, which offer one stop shopping, value for money and hold a large product selection in pleasant surroundings. Trappey and Lai (1997) add that most supermarkets have facilities to process fresh foods and use a wide range of refrigerated facilities to hold chilled and frozen product. Although supermarkets' merchandise assortment is described as limited, their retail strategies resemble the hypermarkets (Roslin and Melewar 2008). Their strategies to attract consumers include focusing on the merchandise width and depth while maintaining a low price.

Convenience stores and petrol stations are new retail concepts in Malaysia. These stores represent around 11.0% of retail sales and are located in major urban centres and along highways to capture those consumers who prefer convenience (Pricewaterhouse Coopers 2006). In Malaysia, the main convenience store is 7-Eleven. It is estimated that there are around 120 convenience stores and 500 petrol stations. These stores offer a greater variety of products, longer hours of operation and lower prices compared to the traditional grocery stores or mini-markets.

In the past, modern retail formats have generally been built in larger cities which serve the rich and middle class (Reardon et al. 2003). In Malaysia, modern retail formats are mainly located in the major urban centres (Shamsudin and Selamat 2005). Most hypermarkets are located in the states where the population density is higher and more affluent – Selangor, Kuala Lumpur, Johor and Penang. Selangor has the highest number of hypermarkets (Mui et al. 2003). In 2000, there were 392 supermarkets and 22 hypermarkets in Malaysia (Table 2.16).

Table 2.16: Number of modern retails in Malaysia

Indicator	2000	2005	Average Annual Growth Rate (%) 2001-2005
Shopping complexes	392	550	7.0
Shop Units (‘000)	242	297	4.2
Hypermarkets	22	81	29.8
Foreign	16	68	33.6
Local	6	13	16.7

Source: Ministry of Domestic Trade and Consumer Affairs, Ministry of Entrepreneur and Cooperative Development and International Data Corporation.

Five years later, the number of supermarkets in Malaysia had increased to 550 and the number of hypermarkets had increased to 81.

Foreign-owned retailers dominate the retail sector in Malaysia (Table 2.17).

Table 2.17: Major retailers in Malaysia in 2004

Group’s Name	Ownership	Type of business	Number of stores	Net Sales (RM) million
Dairy Farm Giant Retail	Dairy Farm International Hong Kong	Hypermarkets, supermarkets and pharmacies.	222	2,458.6
Jaya Jusco	Jaya Jusco Stores Bhd, Aeon Group, Japan	Superstore chain and shopping center operation.	11	1,523.8
The Store Corporation	The Store Corporation	Departmental stores cum supermarkets, and hypermarkets.	38	1,162.8
Carrefour	Magnificent Diagraph, Carrefour, France	Hypermarkets	8	999.4
Tesco	Tesco, UK and Sime Darby Bhd, Malaysia	Hypermarkets	6	573.8
Makro Cash and Carry Distribution	SHV, The Netherlands	Hypermarkets	8	775.2
Parkson Retail Group	Parkson Corporation, retailing arm of Lion Group, Malaysia	Departmental stores and hypermarkets	31	414.2
Ngiu Kee Corporation	TKN Enterprise	Supermarkets and departmental stores	5	155.8
Ocean Capital	Ocean Capital Malaysia	Departmental stores and supermarkets	17	79.8

Source: Adapted from Arshad et al. 2006.

The foreign owned retailers include Giant (Hong Kong), Jaya Jusco (Japan), Carrefour (France), Tesco (UK) and Makro (Holland). Local retail chains include The Store, Parkson, Ngiu Kee Corporation, Ocean Capital, Mydin, Bintang, Billion and EconSave. In 2004, Giant recorded the highest net sales revenue, valued at RM2,458 million, followed by Jaya Jusco (RM1,523 million) and The Store Corporation (RM1,162 million). Giant dominated the market with a total of 222 stores, followed by The Store Corporation (38), the Parkson Retail Group (31) and Ocean Capital (17).

More recently, modern retail outlets have started to spread into small towns in rural areas. This is to penetrate the fresh food markets for the poor. It has been reported by Reardon et al. (2003) that in Chile, about 40.0% of small towns have at least one supermarket. In Thailand, supermarkets have started to spread to other provinces beside Bangkok (Chen et al. 2005). In Malaysia, two hypermarkets are located in Negeri Sembilan, where the population is lower than the developed states (Mui et al. 2003). Tey et al. (2008c) indicated that the second wave of modern retail development has seen hypermarkets open in Segamat, Banting, Nilai and other mid-sized towns in Malaysia.

Despite the development of modern retail outlets in Malaysia, ACNielsen (2006) reported that grocery stores/mini-markets continue to hold the largest share of the retail trade (49.0%) (Table 2.18).

Table 2.18: Value percentage of share of trade

Type of retailer	Value of share of trade (%)
Grocery stores/mini-markets	48.9
Supermarkets/hypermarkets	39.9
Independent supermarkets	19.9
Drugstore/pharmacy	9.0
Chinese medicinal hall	1.5
Convenience store	0.6

Source: Adapted from Roslin and Melewar 2008.

Supermarkets and hypermarkets were reported to have gained a 40.0% share. Not unexpectedly, the rapid development of these modern retail outlets has alarmed smaller retailers in the industry. In 1999, a study on the Impact of Hypermarkets on

Distributive Trade revealed that the expansion of hypermarkets had adversely affected the sales of 58% of the retailers in neighbouring areas where the hypermarkets were located (Malaysia 2001). Moreover, ACNielsen (2003) reported a sharp decline in the number of independent retailers operating grocery stores and mini-markets (Table 2.19).

Table 2.19: Total number of retailers in Peninsular Malaysia for 2000-2002

Type of retailer	2000	2001	2002	Change (%)
Hypermarkets	25	31	33	6.4
Supermarkets (standalone)	196	144	155	7.6
Supermarkets (in department stores)	203	272	282	3.6
Grocery stores/mini-markets	30,084	28,659	27,944	-2.5
Convenience stores	1,195	1,020	1,242	21.7

Source: Adapted from Roslin and Melewar 2004.

Given the number of grocery stores/mini-markets that have closed, Roslin and Melewar (2008) suggested that there was a need to evaluate the impact of the modern retail outlets on traditional traders. Although traditional traders were reported to be the victims of the intense competition from modern retailers, there are findings which suggest otherwise. Hafidz (2003) [cited in Roslin and Melewar (2008)] revealed how the shift in population from rural to urban areas and the development of market centres has contributed to the failure of traditional retail stores. Hafidz (2003) reported that the majority of store closures occurred mostly in rural areas rather than urban areas. Suryadarma et al. (2010) found that the expansion of modern retail formats had no significant impact on the profit and revenue of traditional retailers. Competition was more intense among the traditional traders rather than with modern retail formats. These results were supported by qualitative findings which reported how traditional traders continue to survive in the retail market, as a result of improvements in traditional market infrastructure, the organisation of street vendors and the implementation of better marketing management practices.

Although modern retail formats are dominating the food retail sector, supermarkets and hypermarkets generally concentrate on processed, dry and packaged foods, rather than fresh food items. The move towards fresh food lines is generally slow.

ACNielsen (2003) report that between 80% to 90% of Asian shoppers still use wet markets regularly. According to Goldman et al. (1999), supermarkets in other Asian countries like China, Indonesia, Japan, Singapore and Taiwan, are unable to dominate fresh food lines due to serious problems in handling the fresh food category. In the traditional markets, retailers are able to fulfil consumers' specific requirements such as requesting a specific size, quantity and quality. In terms of fish and meat items, consumers want it 'live and warm'. This situation cannot be experienced in modern retail outlets where most fish and meat items are frozen or chilled.

Despite the dominance of modern food retailers in the West, traditional retail formats are still important in Malaysia, for they continue to capture a high percent of the groceries purchased (57%), compared to only 31% for supermarkets and hypermarkets (Idris 2002). Consequently, both retail outlets are expected to coexist for some time to come.

2.5 Food service industry in Malaysia

According to Arshad et al. (2006), Malaysian households spend almost a quarter (24%) of their household income on the retail purchase of food. Retail food purchases include the consumption of food-at-home and food-away-from-home. Heng and Guan (2007) defined food-at-home as food prepared and consumed at home, while food consumed away-from-home included that food consumed in a diversity of food outlets such as restaurants, food courts and roadside stalls, or bought from these places and consumed at home. The Malaysian Department of Statistics (2000) report that expenditure on food-at-home has declined from 33.7% in 1973 to 20.4% in 2004/2005. On the other hand, the expenditure on food-away-from-home has increased from only 4.6% in 1973 to 10.8% in 2004/2005. The United States Department of Agriculture (USDA) report that the food service industry in Malaysia has been growing at around 7% per annum over the past five years (Stanton et al. 2009). As more Malaysians are consuming more food-away-from-home, there is a need to discuss the food service industry in Malaysia.

According to Heng and Guan (2007), the food service industry in Malaysia can be classified into five main categories (dine-in restaurants, fast-food outlets, coffee shops, food courts/hawker centres, and roadside hawkers).

Dine-in restaurants, which include coffee houses or restaurants in hotels and resorts, are normally air-conditioned food outlets. Many restaurants serve various cuisines ranging from Western menus (European, Continental, American), as well as Asian (Japanese, Chinese, Thai) and local delicacies. Other full service restaurants include foreign-owned restaurants such as Tony Roma and TGI Friday, or local origins (Secret Recipe and The Manhattan Fish Market) that meet the appetite of a growing middle class.

Most fast-food outlets provide Western-style menus such as McDonalds, Pizza Hut and KFC. Given that these food outlets are franchised, they must follow strict food preparation specifications and offer standardised prices (Heng and Guan 2007). There are also a number of café chains emerging such as Starbucks, Dome and Delifrance. Customers who often visit these food outlets are mainly young working adults and teenagers who demand quick service, and a clean and comfortable environment (Stanton et al. 2009).

Coffee shops, also known as *kopitiam*, have become the preferred place to dine out, for they offer popular menus such as local-grown coffee drinks, *nasi lemak*, toast and half-boiled eggs. Food courts or hawker centres are located in most major shopping malls and serve both local and Western-style cuisine. Roadside hawkers are hawkers peddling their food along the streets (Heng and Guan 2007). Customers are mainly attracted by the cheap food offered by these hawkers.

With the diversity of food outlets expanding in Malaysia, consumers have more choice as to where they will purchase their food. Studies by Radam et al. (2006) and Heng and Guan (2007) have found that socio-demographic characteristics (ethnicity, income and place of residence) have a strong influence on the consumption of food-away-from-home. Ethnicity is commonly associated with the level of income in Malaysia. Given that ethnic Chinese are commonly associated with wealth, Chinese ethnicity had a positive influence on the consumption of food-

away-from-home (Radam et al. 2006). Not unexpectedly, the total monthly income was also found to have a positive impact on the expenditure of food-away-from-home (Nik Mustapha et al. 2001; Ishida et al. 2003; Radam et al. 2006; Heng and Guan 2007). Radam et al. (2006) found that for each 1.0% increase in income, the expenditure on food-away-from-home increased by 0.8%. As a result of this, more wealthy households purchase more food-away-from-home.

Manrique and Jensen (1998) [cited in Heng and Guan (2007)], identified that the location where households reside (either in urban or rural areas) will also influence the expenditure patterns of the household when purchasing food. According to Radam et al. (2006), the level of economic development in Malaysia differs from one state to another. For example, fast-food chains such as McDonalds and KFC are concentrated in major cities (Radam et al. 2006). Due to traffic congestion in most urban areas, households often experience time constraints. Consequently, they may have no time to prepare food-at-home, which contributes to the increased consumption of food-away-from-home (Heng and Guan 2007).

Other socio-demographic characteristics such as age, education, gender and household size were reported to have limited effects on the consumption of food-away-from-home. Given that dining out has become a regular feature of the Malaysian lifestyle (Heng and Guan 2007), everyone regardless of age and education level may participate in this leisure activity. In terms of gender, Ong (1993) reported that there was little difference between male and female household members when it came to dining out. Heng and Guan (2007) added that it is not uncommon in Malaysia to see the whole household consume food-away-from-home as a group. Although findings by Nayga and Capps (1993) indicate that the consumption of food-at-home increases when family size increases, Heng and Guan (2007) found that household size had no significant influence on the consumption of food-away-from-home. Although it was noted that the total expenditure when dining out may be higher for larger households (Tey et al. 2009), they have the option to dine at food outlets such as food courts/hawker centres or roadside hawkers which provide food at a more reasonable price.

2.6 Chapter summary

Arshad (2007) mentioned that the food distribution system in Malaysia was restructuring as the level of education, personal disposable income and urbanisation has increased over many years. Consumers are becoming more demanding in terms of the quality and safety of their food, and thus they require more information about the food they plan to purchase and consume. As more food is being imported to overcome the inability of domestic food production to meet the demand, Malaysian consumers are now being exposed to greater problems with regards to the Halal status of the product and the safety and quality of the food.

In Malaysia, traditional retail outlets such as the wet markets, farmers' markets and grocery stores were once the sole channel from which to purchase fresh food. However, consumers today have more choice and accordingly, will purchase fresh food from those retail outlets which best fulfil their needs.

With the consumers' growing demand for food safety and their desire for a wider range of better food quality at more competitive prices, modern retail outlets have rapidly expanded their market share in much of South East Asia. Although Reardon et al. (2005) reports that the market share of supermarkets in retail food sales such as fresh meat and fruit and vegetables averages only 33.0% in several Southeast Asian countries, including Malaysia, it is anticipated that the supermarkets' market share will soon surpass the traditional retail markets. However, the speed at which supermarkets are replacing the traditional retail markets differs between countries, where the process may be occurring gradually or rapidly.

Besides competition from the modern retail formats, traditional retailers must also confront convenience food and the greater consumption of food-away-from-home. According to Ragaert et al. (2004), the consumption of semi-processed vegetables and pre-packed fruit is becoming increasingly common among consumers who place much importance on convenience. Magdelaine et al. (2008) mentioned that convenience foods such as marinated meat, cooked or ready-to-cook products, where the meat has been cut in cubes or slices, are becoming increasingly common among consumers in Europe. Ragaert et al. (2004) mentioned that convenience food

is generally bought and consumed during weekdays by younger consumers who are working outside the home.

The food service industry is therefore expected to grow as the Malaysian economy expands. Heng and Guan (2007) report that the consumption of food-away-from-home is rising. However, studies by Lin et al. (2001), Guthrie et al. (2002) and Variyan (2005) [cited in Heng and Guan (2007)] have shown that food-away-from-home is often less nutritious. With higher calories and cholesterol, the consumption of food-away-from-home is often associated with negative health effects. Therefore, consumers who are more health conscious may want to prepare more meals at home for their household's consumption.

Looking at the supply side, the presence of major retail players in the food industry is changing the production and distribution system. Smallholder farmers are being forced to collaborate to achieve economies of scale and contract farming is becoming more common (Arshad 2007). Modernisation of supply chains is anticipated to impact on all those involved, including smallholder farmers, wholesalers, retailers and consumers.

3. An overview of consumer behaviour with relation to their food purchase behaviour and the perceived quality model

3.1 Chapter outline

This chapter draws on the consumer behaviour and perceived quality literature to gain a better understanding of the stages involved, together with the various terminologies utilised in the consumers' decision to purchase fresh food. This is followed by a discussion of the motives involved (directly or indirectly), which may influence consumer's perceptions and experiences of food quality after purchasing fresh food from a retail store. A conceptual framework of perceived quality is then proposed for this study. The chapter ends with a discussion on the different behaviour consumers may exhibit when either satisfied or dissatisfied with their decision to purchase.

3.2 The importance of understanding consumer behaviour

Neal et al. (2007, p.6) defined consumer behaviour as the discipline dealing with how and why consumers purchase goods and services. Blythe (2008) indicates that until recently, the main focus of consumer behaviour research was about understanding why people purchase a product. According to Neal et al. (2007), consumer behaviour is a combination of both observable and non-observable behaviour. Observable behaviours include the amount purchased, when, by whom, and how the purchases were consumed, while the non-observable criteria consist of consumers' values, personal needs and perceptions, together with how consumers process and evaluate the information they gather prior to purchase.

Grainer et al. (1979) and Stanley and Robinson (1980) propose that consumers are often dissatisfied with the quality of the food they receive. A gap exists between producers and consumers, where producers are largely unaware of the dissatisfaction consumer's experience. Morgan (1985) identified this gap as the 'quality perception gap'. In order to reduce the gap, consumers should be at the core of everything that the firm does. As indicated by Blythe (2008), consumer behaviour focuses on customer retention, which places greater emphasis on customer service, customer contact and customer commitment.

According to Veeck and Veeck (2000), studies on consumer behaviour, specifically food purchase patterns in East Asia, are limited. Both researchers indicate that the consumption patterns observed for Western consumers may not always correspond with those observed in Asia. Goldman and Hino (2005) demonstrate that the economic development in the West, which shifted consumers to purchase food from modern retail stores, does not always occur for consumers in Asian countries such as Taiwan, Singapore and Hong Kong. Despite having access to supermarkets and hypermarkets, consumers prefer to purchase fresh meat and fresh fruit and vegetables from the wet markets (Goldman 1991; Goldman and Hino 2005).

Furthermore, consumer preferences in purchasing food are often dissimilar between countries. Whereas consumers in Argentina, Mexico, China and North America are not opposed to genetically modified food because of the lower cost, consumers in Western Europe and Japan were concerned about the potential hazards of consuming genetically modified products (Nielsen et al. 2003).

According to Neal et al. (2007), consumer behaviour is person, product or situation specific. This means that the way consumers purchase and consume a product may vary among products, or even when consumers repeat the purchase for the same product. Cultures, values and food shopping habits are expected to influence consumer behaviour (Veeck and Veeck 2000). Keast (2009) suggests that food quality perceptions are determined within the context of sensory (taste, smell, food texture, appearance) and non-sensory factors which include: (1) price; (2) convenience; (3) branding; (4) food processing (religious, ethical concerns, environmental considerations, animal welfare); (5) credence attributes (nutritional value, health benefits, production techniques); (6) cultural differences, and (7) food traditions (birthdays, weddings, special events), which in turn are subject to individual differences and situational factors. Moreover, Keast (2009) found that food quality perception is a subjective experience which is definable only by individuals, for the variables which were used to determine the quality of a product may not necessarily reappear on the next purchase occasion. Given that the food consumption patterns of Malaysian consumers are changing (Mohayidin and Samdin 2001; Ishida et al. 2003; Tey et al. 2008b) and there is a lack of information

about consumer behaviour related specifically to food purchase, this demonstrates the importance of undertaking this study.

3.3 Consumers' involvement in food products

Antonides and van Raij (1998) [cited in Juhl and Poulsen 2000] have defined involvement as the level of a consumer's personal relationship with a product or service, which includes perceived importance, value and risk. In general, the purchase of food is a low product involvement decision (Beharrell and Denison 1995). The reasons for this are supported by Verbeke and Vackier (2004), who indicate that food products have a low potential to reflect self-image because they are generally low cost items. Nevertheless, Beharrell and Denison (1995) found that a consumer's involvement in food shopping depends upon each product category. This results in differing levels of involvement and different behavioural outcomes. More recently, consumers have begun to show their interest in learning more about the whole system of food production. Consumers are becoming more concerned about food safety and the healthy aspects of food (Juhl and Poulsen 2000). This demands more information searching, evaluating more product attributes and weighing more beliefs, which in the end requires more problem solving (Verbeke and Vackier 2004).

Beharrell and Denison (1995) found that the levels of involvement for food products such as fresh meat, dairy and cereals was significantly higher than toiletries and cosmetic products.

3.4 Consumer motivations on food

The concept of human motivation was first introduced by Maslow in 1943 (Blythe 2008). The physiological needs, which include food and water, are among the most essential requirements for human survival. People are expected to fulfil their physiological needs first, followed by satisfying their other needs such as safety, the sense of belonging, esteem and self-actualisation.

Consumers have many motives which may influence their food choice. Consumer motivations are defined as a series of psychological factors which initiate the

decision-making process (Verbeke et al. 2006, p.620). Von Alvensleben (1997) suggested four motives which were considered by consumers when purchasing food. The primary motive is to satisfy a person's hunger. When the basic physiological motive has been fulfilled, food is also consumed for satisfying nutritional needs. This was supported by Rozin et al. (1999) who confirmed that the basic function of food is to provide nutrition and energy for physical well-being.

Safety is the second motive influencing the consumers' decision to purchase food (Von Alvensleben 1997). In 1996, the Food Marketing Institute reported that the majority of consumers thought that the food they purchased was safe (Wilcock et al. 2004). This emerged from the consumers' trust in the relevant government agencies and food processing companies that were responsible for ensuring food safety. Nevertheless, several researchers have shown that most consumers seldom implicitly consider food safety (Sockett 1995; Woodburn and Raab 1997; Worsfold 1997).

The third level of consumer motivation is the social motive, which comprises the sense of belonging, friendship and affection (Von Alvensleben 1997). Here, consumers may be more selective in their food choice when preparing food for special occasions. In Malaysia for example, the demand is higher for premium beef when celebrating the Eid festival.

The final motive is for consumers to fulfil their esteem, prestige and status needs (Von Alvensleben 1997). Often consumers select convenience food because of the lack of time to prepare food at home, thus consumers must choose between the convenience factor or "lower" motives such as the concern for a more healthy lifestyle.

3.5 Consumer behaviour models with respect to consumers' food choice

3.5.1. Steenkamp (1990)

Steenkamp (1990) focused on the theoretical concepts of the food quality perception process. A definition of perceived quality was developed and discussed

in the context of value. Relating perceived quality and value was developed from Rokeach's (1973) study of human values. Value was seen as the core concept in all social sciences. Value has been defined as a relativistic preference characterising a subject's interaction experience with some object (Holbrook and Corfman 1983, p.23).

Value is related to perceived quality through three dimensions; preference, subject-object interaction and consumption experience (Steenkamp 1990). Preference indicates an evaluative judgment, for example, whether the consumer prefers the food or some alternative. Perceived quality can also be subjective. Objective interaction occurs through comparison and is influenced by personal and situational contexts. Finally, perceived quality involves the consumption experience, where a product is valued for its purpose after consumption.

As a result of conceptualising perceived quality along the three dimensions of value, Steenkamp (1990) defined perceived quality as *an idiosyncratic value judgement with respect to the fitness for consumption which is based upon the conscious and/or unconscious processing of quality cues in relation to relevant quality attributes within the context of significant personal and situational variables* (p.317).

When consumers decide to select a particular food, their preferences are based on several sensory characteristics (taste and texture) and non-sensory characteristics (health, religious, ethics, etc). For example, each consumer perceives that the food they consume is influenced by the values and beliefs they possess. However, most consumers are largely unaware how the subconscious values and beliefs that they hold influence their food choices.

3.5.2. Oude Ophuis and Van Trijp (1995)

Oude Ophuis and Van Trijp (1995) have a different approach to defining perceived quality. According to these authors, quality can be seen from two different perspectives. The first perspective suggests that quality can be captured through experience, but cannot be analysed. The other perspective indicates that quality is

measurable through certain standards. Both authors support the latter perspective, but reinforce the need to understand and to define the standards.

In order to define perceived quality, Oude Ophuis and Van Trijp (1995) introduced a quality quadrant, which consisted of four Ps; perception, product, person and place. Perception is the overall judgment of the product characteristics (either visible or invisible), which the consumer could associate with or have experienced when evaluating the product.

The other three Ps; product, person and place, represent and relate back to the whole concept of perceived quality. Perceived quality is different, depending on the product category. For example, quality attributes such as leanness may be relevant to consumers when purchasing fresh meat. However, this attribute is not applicable to consumers when selecting fruit and vegetables from a retail store.

The personal factor is important, as the whole idea of perceived quality is based on an individual consumer's judgments. One person's understanding of perceived quality will be different from another person, since personal preferences and experience levels differ from one to another. Finally, place is associated with situational factors which influence perceived quality.

3.5.3. The Total Food Quality Model

The Total Food Quality Model (TFQM) was developed by Grunert, Larsen, Madsen and Baadsgaard (1996) [cited in Grunert 2002]. According to Grunert et al. (1996), the TFQM is a common framework which was developed as a result of emerging concerns about food quality and safety.

Grunert (2005) demonstrated that food quality could be examined through two different dimensions; horizontal and vertical. The horizontal dimension represents the time dimension, which investigates quality perceptions prior to and after purchase. By utilising the three quality attributes (search, experience and credence), consumers were expected to measure the quality of food before (quality expectation) and after purchase (quality experience). Consumers' satisfaction or

dissatisfaction with the purchase will reflect upon the cues that have been utilised in the purchasing process. It means that consumers' satisfaction or dissatisfaction was determined by the relationship between quality expectations and quality experience (Grunert 2002). Subsequently, the level of consumer satisfaction/dissatisfaction will then influence the likelihood of repeat purchase.

The vertical dimension involves the means-end approach, which Grunert (2005) describes as a more complex process. The means-end approach attempts to link product characteristics (quality cues) to the more abstract quality dimensions which are associated with consumer motivations (beliefs, attitudes) and values. When relating food with quality, the concept revolves around four central concepts: sensory characteristics, health, convenience and process characteristics (production) (Grunert 2005). For instance, consumers use colour and fat as quality indicators of the tenderness of meat.

The level of confidence consumers have in making this inference relies on their experience, knowledge and expertise. According to Grunert (2005), how consumers relate the product characteristics to the quality of the food is inexplicable.

3.5.4 Peri (2006)

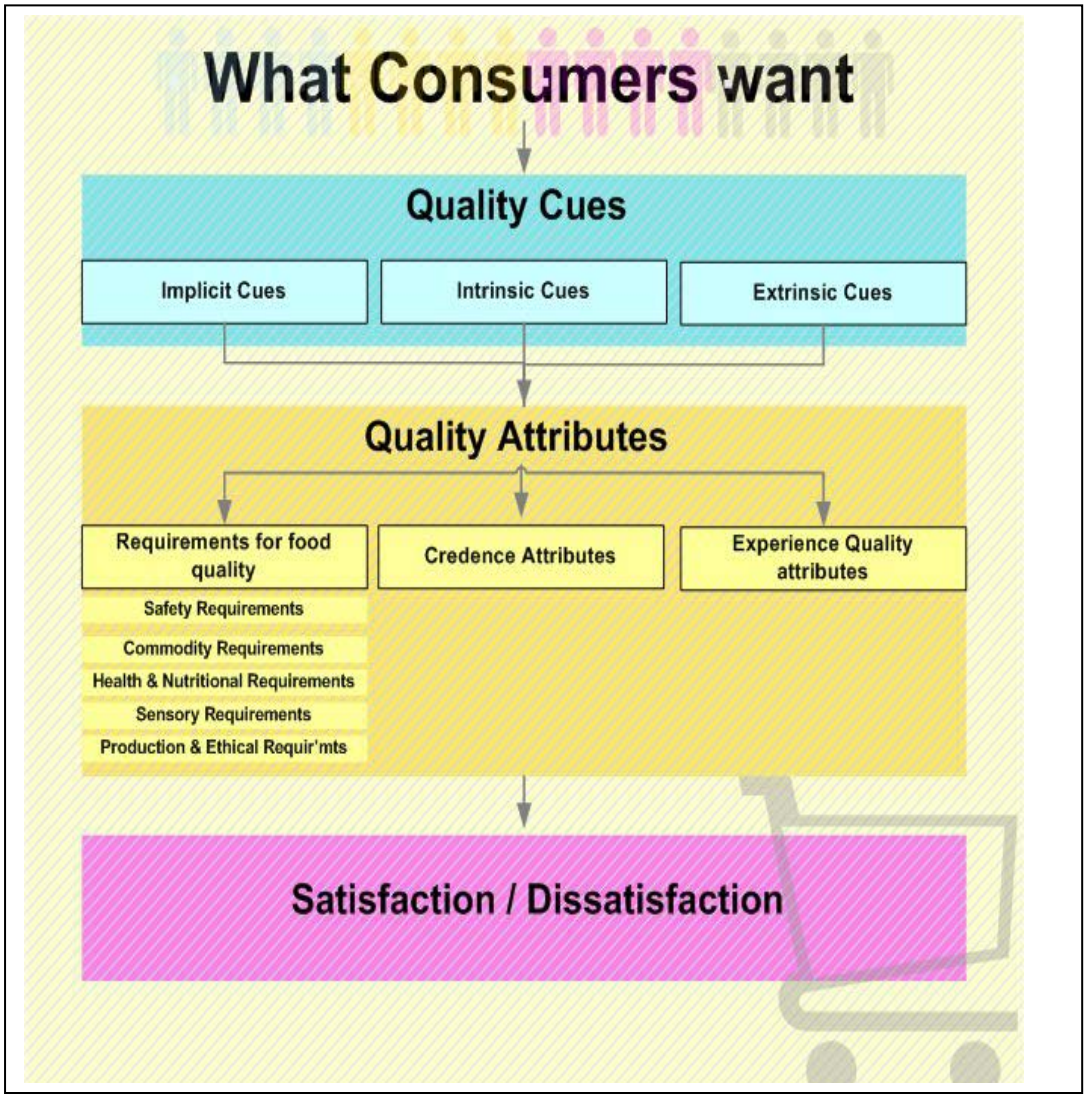
Peri (2006) presented a dynamic model of food quality which involved an on-going process to fulfil consumers changing needs. According to Peri (2006), consumers express their expectations and needs, which are also labelled as 'requirements', which are satisfied by the 'performance' of the product. Unlike Steenkamp (1990) and Grunert (2005) who utilised the concept of attributes, Peri (2006) utilised the concept of 'performance' to capture the importance of quality, which was comprised of safety, nutritional, sensory, functional, aesthetic, ethical and convenience. Additionally, the concept of 'performance' was observed when there was an interaction between consumers and products. 'Performance' was then derived from the 'characteristics' of the product. Peri (2006) further described 'characteristics' as the structural and objective data such as shape, weight, size, structure and composition of the product. The 'characteristics' of the product are obtained through the production process.

Through this model, Peri (2006) also highlighted the importance of being able to associate a product's performance with the consumers' expectations of the product's characteristics. Peri (2006) identified a significant barrier in the food industry where there is little communication between consumers, who emphasise the importance of 'performance', and producers, who are more concerned about the 'characteristics' of the product.

3.6 A conceptual framework for perceived quality

Based upon the theories and models discussed in the previous sections, a conceptual framework for analysing consumers' perceptions and experiences of food quality in purchasing fresh food from retail outlets in Malaysia is proposed (Figure 3.1).

Figure 3.1: A model of perceived quality



3.6.1 Quality cues

Quality cues are defined as information stimuli that are related to the quality of the product and can be ascertained by the consumer through the senses prior to consumption (Steenkamp 1990, p.312). Consumers are offered a large number of quality cues in the market. In the consumers' mind, desired cues are gathered and categorised, before making predictions of product quality. How the cues are gathered and categorised are based upon the beliefs and prior knowledge of the product that consumers have experienced. Quality cues include:

1. Implicit cues

These are derived from consumers' perception that the food they are about to consume is safe (Peri 2006). Similarly, Keast (2009) found that food safety is an implicit part of food quality, given that safety is what consumers expect when they purchase food. As mentioned by Hester and Harrison (2001) [cited in Keast 2009], consumers generally assume that all food available for consumption has met prior safety standards and requirements. Nevertheless, in some cases, the safety and reliability of the food supply system has being dampened by outbreaks such as the BSE crisis in Europe (Vos 2000) and the bird flu epidemic that hit Asia in 2004 (Abbott and Pearson 2004). Additionally, Wilcock et al. (2004) agreed that making an implicit assumption that the food supply is absolutely safe is impossible, given that there are many incidences where food-borne illnesses have not been reported.

2. Intrinsic cues

The concept of intrinsic-extrinsic cues was developed by Olson and Jacoby (1972) [cited in Oude Ophuis and Van Trijp 1995]. Intrinsic cues describe the physical attributes of the product, which cannot be changed or manipulated without changing the product itself (Oude Ophuis and Van Trijp 1995; Grunert 2005). According to Verbeke et al. (2005), intrinsic cues comprise both search and experience attributes. Consumers may be able to judge search attributes such as appearance, colour, shape, size and structure immediately when doing their food shopping, but, on the other hand, consumers can only evaluate the experience attributes such as taste, tenderness, crunchiness and juiciness after consuming the product.

In the buying process, search attributes were found to be significantly more important, while experience attributes were highly valued during consumption (Ragaert et al. 2004). Particularly in the purchase of fresh meat, consumers with a low degree of product experience may find intrinsic cues relatively less important compared to other quality cues (Brunso et al. 2002). Verbeke et al. (2005) added that intrinsic quality cues are strongly associated to the technological product specifications, which describe the biochemical or biophysical characteristics of the product. Subsequently, the technological product specifications are linked to the sensory attributes, which may then influence the consumers' perception of food quality.

When judging the quality of a raw piece of meat from a retail store, consumers may utilise and evaluate intrinsic cues such as colour, share of fat, fat marbling and meat juice. Brunso et al. (2002) demonstrated how the visual appearance of meat has a strong association with consumers' quality expectations. In the case of purchasing fresh vegetables, Bech et al. (2000) demonstrated how the colour of green peas was perceived to have a significant impact on the flavour. Ragaert et al. (2004) agree with Bech et al. (2000) that intrinsic cues are important evaluative criteria for determining the quality of the food once consumers have experienced it. In cases where intrinsic cues cannot be evaluated prior to purchase, consumers may then rely on other quality cues when ascertaining the quality of the food.

3. Extrinsic cues

According to Oude Ophuis and Van Trijp (1995), extrinsic cues are quality cues that are not related to the physical product, but become an important indicator when comparing between two or more products that are similar in appearance. Price and brand are the best known examples of extrinsic cues. Olson (1977) [cited in Zeithaml 1988] mentioned that in situations when consumers cannot obtain enough information and only refer to intrinsic cues to measure quality, price often appears to substitute for quality. Consumers often perceive that products with a higher price are of higher quality (Oude Ophuis and Van Trijp 1995). However, Zeithaml (1988) suggests that consumers utilise price to indicate the quality of the product when price is the only cue available. Zeithaml (1988) added that the utilisation of price as an indicator of quality depends on: (1) the availability of other cues; (2) differences

in price for products from the same category; (3) consumers' awareness of the price of the product, and (4) consumers' ability to detect quality variation in a group of products.

Brand name or label is another extrinsic cue which is widely applied in the food area (Oude Ophuis and Van Trijp 1995). As mentioned by Bowbrick (1992) [cited in Batt and Sadler 1999], a label attached to a specific product provides information about the specific producer, origin or retailer. Besides conveying information, labels aim to influence consumers with regards to the quality, reliability, social status, value for money or safety level of the product.

In the past, labels have not been widely utilised by consumers, but more recently they provide the only evidence of intangible characteristics such as how the food was produced (McEachern and Schroder 2002).

Grunert (2005) demonstrated how brand names are now widely used to infer the quality of a product. In the food area, Caswell (2000) and Verbeke et al. (2008) illustrated how labels, which signal quality, may transform credence attributes into search attributes, where consumers are able to judge the quality of a food product before purchase. For meat, consumers have started to show an interest in areas such as origin, food safety, information regarding the producers and the production process after numerous food scares (Krystallis and Arvanitoyannis 2006). Sepulveda et al. (2008) agreed that brand names and labels infer not only high meat quality, but also demonstrate a connection to credence attributes such as health and nutrition. Brand names are important in reducing the uncertainty and the risk involved when purchasing food (Grunert 2005; Krystallis and Arvanitoyannis 2006).

In most developing countries where consumers still visit their traditional butchers to purchase fresh meat (Veeck and Veeck 2000; Lapar et al. 2009), the personal contact with their preferred butcher is seen as replacing the value of the brand name (Krystallis and Arvanitoyannis 2006). However, alongside the emergence of modern retail outlets, quality indicators such as brand names or labels start to influence a segment of the market.

For fresh produce, when search attributes such as freshness, size and colour do not always enhance the consumers' consumption experience, consumers may turn to other criteria such as brand (Batt 2009). However, Batt and Sadler (1999) revealed that for the majority of consumers, labels on apples were not always associated with superior quality. Fruit that was labelled did not taste any better, nor did it look any better. For potatoes, Fernqvist and Ekelund (2009) demonstrated how Swedish consumers preferred to purchase unbranded potatoes. In a similar study, the brand was considered least influential for consumers' in Western Australia when purchasing fresh potatoes from a retail store (Batt 2009). As mentioned by Batt and Sadler (1999), the problem with labels is that most growers label their produce, irrespective of quality.

Oude Ophuis and Van Trijp (1995) illustrate how building a brand name can be both lengthy and costly. In forming quality expectations for fresh meat, Grunert et al. (2004) mentioned that branding is a method for a seller to signal a superior quality product, which then reduces consumers' uncertainty and encourages consumers to pay a premium in order to purchase better quality products. Sepulveda et al. (2008) demonstrated that quality-labelled beef was often associated with a higher price, given that quality-labelled beef underwent more quality control. Fernqvist and Ekelund (2009) reported that besides offering better packaging, new varieties and pursuing organic certification, branding of potatoes is an alternative strategy to differentiate the product and achieve a higher price.

In order to capture the higher quality perception that most consumers associate with brand name, most modern retailers are establishing their own private brands (Grunert 2005). Most often, generic products carrying retailer brands are being offered at a much lower price. As a result of this, according to Grunert (2005), consumers perceive these products as being of lower quality.

3.6.2 Quality attributes

Quality attributes are defined as the functional and psychosocial benefits or consequences provided by the product (Steenkamp 1990). Becker (2000) suggested that product attributes are those features of a product that meet the needs of the

consumer. This implies that quality attributes are the expected benefits that a consumer will experience after consumption. Thus, the quality attributes of a product capture what the consumer really wants.

In this research, quality attributes were categorised as: (1) the requirements for food quality, (2) credence attributes, which particularly focus on Halal, and (3) experience quality attributes.

3.6.2.1 Requirements for food quality

With regards to food, Peri (2006) introduced a total of five requirements for food quality, which include:

1. Safety requirements

This revolves around the absence of risk. This is further described by Batt et al. (2006) as controlling biological, chemical and physical contaminants. Food safety requirements for fresh produce are important compared to other types of agricultural products (Martinez and Poole 2004). According to Shepherd (2006), the quality and safety of fresh produce affects the whole production and marketing chain; from the soil used to cultivate the crop, polluted water if used for irrigation and washing harvested produce, untreated manure, and handling by retailers and consumers in the store. Although the presence of microbial contamination brings serious threats to human health, consumers cannot detect the presence of dangerous substances such as viruses, bacteria and parasites on the fresh produce they purchase. Therefore, trusting the retail outlet or usual vendors from whom they buy is one way of ensuring that the produce they purchase is safe to eat. However, as much of the fresh produce purchased is consumed raw or with minimal preparation, the problem is accentuated. The extensive use of agrochemicals can also compromise food safety, for studies in Asia have repeatedly demonstrated that the usage of these agrochemicals is seldom in accordance with label recommendations (Shepherd 2006).

In McCluskey et al. (2005), consumers in the US ranked the importance of food safety over price in their purchase of fresh meat. Similarly, Krystallis and

Arvanitoyannis (2006) illustrated how consumers in Greece were more concerned about food safety in their purchase of fresh meat, which included freedom from microbial contamination and hazardous chemicals. In China, consumers have also ranked safety as the most important attribute when purchasing beef from a retail store (Liu et al. 2006). This was due to the lack of strict quality controls for food production in China.

The availability of unsafe food in the market has partly dampened consumers' confidence level when purchasing food from a retail store. As a result of this, not only are food producers taking action to regulate food safety, but also food retailers (Havinga 2006). Quality control in modern retail outlets has the potential to improve food quality and safety. For instance, Havinga (2006) found that Dutch retailers decided to adopt the British Retail Consortium (BRC) standard as their own food safety assurance scheme. The BRC standard for British supermarkets contains comprehensive norms with regard to food safety and quality systems, product and process management, including: (1) the use of a food hygiene and safety control system based on HACCP; (2) the adoption of a documented quality management system, and (3) the control of factory environments, products and processes through a defined and documented organisational structure (Arfini and Mancini 2003; Havinga 2006). In developing countries, Henson and Reardon (2005) found that some supermarket chains have their own initiatives to develop private food safety standards for products which were categorised as "risky" (fresh fruit and vegetables, fresh meat and dairy products). Although food safety regulations exist in developing countries, Henson and Reardon (2005) note that some governments may not have the capacity to monitor and enforce these policies. Grievink et al. (2002) [cited in Havinga 2006] mentioned that both manufacturers and retailers may be affected if any major food safety issues emerge. Therefore, adopting food quality and safety standards are seen as a method to: (1) reduce risks and liability costs, and (2) encourage consumer confidence in purchasing food products. The emergence of more modern retail outlets is seen as a threat to traditional retailers, given that supermarkets and hypermarkets offer more quality and safe food to consumers.

2. Commodity requirements

These are defined as the conformity of the product according to the law (Peri 2006, p.4). Given that supermarkets and hypermarkets have huge buying power, Wheelock (1992) found that these modern retailers have the resources to develop specifications for own-label brands. Farmers and suppliers who wish to supply to these modern markets must conform to these specifications. These specifications are developed in order to respond to the demands of the consumers. Similarly, Reeves and Bednar (1994) noted that the establishment of specifications must meet consumers' needs and wants. According to Humphrey and Schmitz (2001), questions which revolve around product standards can be referred to the product itself (the physical characteristics such as size and colour in conformance to particular standards) and/or to the process (is the product being produced in ways which conform to specific requirements). Humphrey and Schmitz (2001) then added that the main reason to meet these specifications is to minimise risk, which mainly involves food safety, concerns about labour, environment and animal welfare.

As food safety issues are greater for fresh food products than other agricultural products, governments worldwide have enacted a raft of food safety legislation to protect consumers. The demand for food safety globally has raised concerns about the impact of food regulators on international trade, particularly towards the developing countries (Martinez and Poole 2004). As a result of this, managing food safety systems through implementing Hazard Analysis Critical Control Points (HACCP), Good Manufacturing Practices (GMP) and International Organisation for Standardisation (ISO) standards are seen as strategies towards improving food quality management (Selamat and Hassan 2000; Merican 2000; Unnevehr 2000). The benefits are felt not only by consumers, but also by society at large.

According to Selamat and Hassan (2000), HACCP is a process control system that identifies where hazards might occur in the food production process and provides stringent actions to prevent the hazards from occurring. Maldonado et al. (2005) notes the benefits of implementing HACCP in the Mexican meat industry, as reducing microbial counts, being able to attract new customers, gaining access to overseas markets, and increasing product shelf-life. The adoption of HACCP in the

food industry is prominent in most developed countries, where Unnevehr and Jensen (1999) confirmed that countries such as the European Union, United States of America and Australia have mandatory programs to encourage the adoption of HACCP programs. Nevertheless, Selamat and Hassan (2000) and Merican (2000) report that the implementation of HACCP for food companies in Malaysia is still voluntary. Zulkifly et al. (2008) revealed that fulfilling food safety requirements was a problem for most small and medium-sized food enterprises in Malaysia. Besides costs, the lack of understanding of proper hygienic practices on food production lines, the need to have proper quality control and food safety procedures, and the lack of advanced technologies were identified as barriers towards the implementation of HACCP. Developing countries are foreseen as facing difficulties in meeting the higher levels of sanitary and phytosanitary regulation demanded by importing countries (Martinez and Poole 2004).

3. Health and nutritional requirements

This is one of the main purposes of eating. Consuming nutritious food provides health benefits and strengthens the body against diseases (Peri 2006). In China, Liu et al. (2006) report how consumers with higher education levels identified beef as a nutritious food item which was good for health. In Krystallis and Arvanitoyannis (2006), the health quality attributes were found to be important for consumers who desire health in their diet. Such consumers gathered information about the nutritional value of the product and the production method. In contrast, Pollard et al. (2002) mentioned that a healthy balanced diet could be obtained by reducing the consumption of meat products.

Brug et al. (1995) demonstrated how consumers in The Netherlands placed great importance of the perceived health benefits of consuming fresh fruit and vegetables. Consuming fresh fruit and vegetables was perceived to be more healthy because of the consumption of vitamins, the ability to lose weight and the reduced likelihood of succumbing to many diseases. Health was mentioned as an important quality attribute by consumers in relation to their fresh fruit and vegetable purchases (Pollard et al. 2002).

Furthermore, consumers are increasingly turning towards products with low fat, low sugar, no preservatives and no artificial colours or flavour enhancers (Lappalainen et al. 1998; Prescott et al. 2002). Cade et al. (1999) found that people who placed more importance on their diet and maintaining a healthy lifestyle were willing to spend three times more to purchase fresh fruit and vegetables.

4. Sensory requirements

In Becker (2000), characteristics such as taste, flavour, tenderness, leanness, juiciness and texture were grouped as sensory characteristics. These sensory characteristics are also known as experience quality attributes, which are experienced at the time of consumption. As indicated by Oude Ophuis and Van Trijp (1995) and Pollard et al. (2002), taste is the most important experience quality attribute for food. McCarthy et al. (2003) mentioned how sensory attributes such as taste play a part in the consumer's level of 'eating enjoyment'. Taste is based on an observation of the food, and is influenced by the environment, geography, demography, socio-demography and psychological variables (Sijtsema et al. 2002). Generally, women perceive taste, flavour and texture as being more important than men (Ragaert et al. 2004). When consumers consume food, the taste sensation is evaluated to determine whether the product is good or otherwise.

During the purchasing process, particularly for fresh meat, consumers may not have the opportunity to taste the food prior to consumption. Oude Ophuis and Van Trijp (1995) mentioned that some interaction between intrinsic and extrinsic quality cues with the experience quality attributes existed. For instance, search quality cues like colour, marbling, leanness, place of purchase, price and country-of-origin are cues that may enable the consumer to assess the eating quality of the meat while shopping (Becker 2000). According to Peri (2006), sensory requirements connect food and consumers.

In the purchase of fresh meat, Grunert (1997) demonstrated how taste was the most important attribute when purchasing meat among European consumers. Egan et al. (2001) conducted a comparison study between two groups of consumers and found that Australian consumers preferred tenderness and fineness of texture in their beef, whereas Japanese consumers preferred a stronger taste. Taste and eating quality

were also mentioned as important quality attributes by McEachern and Schroder (2002) in the consumers' choice of fresh meat, along with price, fat distribution and colour. McCarthy et al. (2003) observed how consumers' perceptions of good taste lead to a positive attitude towards the product.

Taste was among the important factors for Dutch consumers in their decision to purchase fresh fruit and vegetables (Brug et al. 1995). Wandel and Bugge (1997) found that the quality properties for fruit and vegetables were determined by taste and freshness. For potatoes, almost half of the 1,103 respondents in Norway rated taste as the most important indicator for quality. Similarly, Abbott (1999) mentioned that consumers incorporate sensory characteristics such as taste, appearance, aroma, flavour, hand-feel and mouth-feel to evaluate quality and to make a final judgement in accepting or rejecting the fruit and vegetables they intend to purchase. However, Pollard et al. (2002) noted that the taste of fruit and vegetables is subjective and differs between individuals. Pollard et al. (2002) added that the inability to taste certain compounds may result in consumers rejecting the food.

5. Production and ethical requirements

According to McEachern and Schroder (2002), the consumers' values, which are influenced by their belief system, should be analysed in defining food quality. Consumers are concerned about how, when and where their food has been produced. As mentioned by Grunert (2005), consumers are interested in learning about process-related qualities. These include food safety, sustainability of agricultural production systems, genetically modified food, animal welfare, farm labour conditions and child labour (Steenkamp 1990; Oude Ophuis and Van Trijp 1995; Becker 1999). The production and ethical requirements are often grouped as credence attributes (Grunert 2005).

In meat production, European food safety legislation protects not only consumers, but also responds to aesthetic and ethical issues such as genetic modification of animals, animal housing, animal nutrition and the usage of antibiotics (McEachern and Schroder 2002). Furthermore, in McCluskey et al. (2005), Bonne and Verbeke (2006), and Krystallis and Arvanitoyannis (2006), consumers have shown their

concern towards the application of growth hormones to animals. A greater respect for the welfare of the animals, is of concern for a growing segment of consumers (Wandel and Bugge 1997; Blokhuis et al. 2003; Brunton 2009). However, in practice, McEachern and Schroder (2002) and Wandel and Bugge (1997) suggest that it is difficult for most consumers to focus on ethical issues when purchasing fresh meat, given that they need to pay more for these higher value products.

In the purchase of fresh fruit and vegetables, organically grown produce is a common issue often raised by consumers. Harper and Makatouni (2002) provide a thorough description of organic food, which covers food content (no pesticides and no genetically modified ingredients), food production methods (produced naturally using environmentally friendly methods), food values (healthful and safe to eat), and social class (organic produce is most often consumed by consumers from the higher socio-economic classes). Beside the concern for the production method, Grunert (2005) mentioned that consumers perceived organically grown produce to have a superior taste compared to conventionally grown produce. Yiridoe et al. (2005) reported on consumers' attitudes toward organic food and their preferred quality attributes (health, taste, food safety, and concern towards the environment).

In Asia, county-of-origin is currently perceived to be the most important piece of information consumers require in their decision to purchase a particular food product (Batt et al. 2006). Furthermore, consumers are showing a greater interest in the ethical values of food production, which includes organic agriculture, concern for the environment, animal welfare and worker welfare (Becker 1999; Peri 2006).

In Malaysia, Prescott et al. (2002) demonstrate that Malaysian consumers are placing more emphasis on health, natural content (no additives, natural and no artificial ingredients), weight control and convenience, rather than any ethical concerns in their choice of food products. Ahmad and Juhdi (2008), have found that Malaysian consumers have a greater knowledge of organic food and believe that by consuming organic food, they can confidently contribute to the preservation of the environment.

3.6.2.2 Credence attributes

These denote features of the product which are considered important by the consumer, but are not experienced directly in consumption (Becker 1999).

Besides placing much importance on purchasing food that is safe and healthy to eat, Bonne and Verbeke (2006) demonstrate how religion influences consumers' attitude towards the food that they have purchased. In a Muslim country such as Malaysia, eating food that is Halal is considered important. Generally, Halal means permissible to eat according to Islamic rulings. Halal has been defined by the Malaysian Halal Standard MS 1500:2004 as food permitted under Islamic law and to have fulfilled the conditions of; (1) the food or ingredients do not contain any non-Halal products which are not slaughtered according to Islamic law; (2) the food is safe and not harmful; (3) the food is not prepared, processed or manufactured using equipment that is contaminated; and (4) during the preparation, processing, packaging, storing or transportation, the food is physically separated from any other food that is non-Halal. The definition of Halal includes the production process, handling method and the safety of meat products. Bonne and Verbeke (2006) add that the slaughter method under Halal includes some consideration for animal welfare and respect for animals.

As a result of uncertainty during the purchasing process, it is expected that consumers will utilise other intrinsic and extrinsic cues in order to evaluate credence attributes. In Bernues et al. (2003), animal feeding and origin were the two main extrinsic cues to predict the safety level of the meat (credence quality) by consumers from European countries. van den Heuvel et al. (2007) demonstrated how the physical characteristics of tomatoes have a significant effect on consumers' health perceptions.

The slaughtering method (credence attribute) was found to be the most important attribute for Muslim consumers in Belgium when purchasing fresh meat (Bonne and Verbeke 2006). Given that the slaughter method cannot be verified by consumers even after consuming the food, they associate this attribute with the place of purchase, where they trust their butcher, who is also Muslim, to deliver Halal meat.

According to Bonne and Verbeke (2008a), Muslim consumers most trust their family and friends, followed by Islamic butchers, to obtain information about Halal meat. In an asymmetric market, Becker (1999) mentioned that credence quality could also be verified by experts (sellers) who have more information about the product than consumers (buyers).

According to Riaz (1996) [cited in Ahmed 2008], the utilisation of labels to indicate that the food product is lawful for Muslim consumption is still low. Subsequently, the number of Muslim consumers that highlight the importance of Halal certification (labels) on food products is increasing (Abdul et al. 2008). In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is the sole agency responsible for certifying a particular food product or a food outlet as Halal and being fit for consumption by Muslims. In Belgium, Muslim consumers placed the most confidence in Islamic institutions to supervise the Halal meat chain and to introduce Halal labels (Bonne and Verbeke 2008a).

As more food is being purchased from modern retail outlets, Bonne and Verbeke (2006) reveal that besides convenience and food safety, consumers were also searching for Halal food in supermarkets. Younger consumers particularly dislike purchasing household products at one retail shop, and prefer to purchase fresh meat from their preferred butchers in traditional outlets. At the same time, Ahmed (2008) reported that Halal-labelled fresh meat was better presented in modern retail outlets in contrast to fresh meat in traditional retail markets. Nevertheless, Bonne and Verbeke (2006) and Ahmed (2008) agreed that not all consumers were confident in the Halal label attached to the meat products sold in supermarkets, due to the uncertainty and sceptical attitude they had about the genuineness of the Halal label.

3.6.2.3 Experience quality attributes

According to Becker (1999), in order to grasp the quality attributes, a consumer has to actually consume the product to experience the quality. Grunert (2005) has similar thoughts, describing the experience quality attributes as being evaluated after purchasing the product. This suggests that the quality expectations formed by consumers rely on several quality cues that could be either verified or contradicted

once the consumers experienced the food. Becker (1999) proposed the term ‘eating quality’ rather than ‘experience quality’ on the basis that the new term was more understandable by consumers.

Becker (2000) demonstrated how search quality or quality in the shop (intrinsic and extrinsic cues) were used by consumers to infer the experience quality. For instance, in the purchasing of meat, Krystallis and Arvanitoyannis (2006) revealed how consumers used the visual quality cues such as leanness and colour to determine the taste. Batt (2004) found that consumers tend to associate the colour of potatoes (yellow skin and flesh) with potatoes that tasted good and cooked well.

As mentioned by Bernues et al. (2003), meal preparation is also an important factor influencing experience quality. Bredahl (2004) demonstrated a relationship between expected quality and meal preparation methods, together with sensory quality to determine experience quality. Grunert (2005) proposed that meal preparation or the home production process was more important for the overall quality experience than the quality of the product itself. For example, an individual with good cooking skills may be able to prepare a good meal even from an average piece of meat. Conversely, a high quality piece of meat may deliver a bad taste or texture if it is not cooked appropriately.

Although food is purchased continuously, according to Grunert (2005), quality perceptions towards the product may change over time. On the first purchase occasion, the consumer relies heavily on quality cues that the consumer has never experienced. During the second and following purchase occasions, consumers are expected to utilise quality cues, as well as their previous experience in consuming the product. If the experience is good, consumers may utilise the same quality cues for the next purchase. However, if they encounter an unpleasant experience after consuming the food, consumers will then make use of different quality cues.

According to Becker (1999), information from newspapers and word-of-mouth is important to communicate the characteristics of the product to consumers. Furthermore, quality signs such as labels and brand names have been found to influence consumers’ quality perceptions of meat (McEachern and Schroder 2002;

McCluskey et al. 2005; Krystallis and Arvanitoyannis 2006; Sepulveda et al. 2008) and fresh fruit and vegetables (Beharrell and MacFie 1991; Caswell 2000; Batt 2009; Fernqvist and Ekelund 2009). Becker (2000) mentioned that brand names have to have some confidence value and represent a strong signal of quality. In relation to experience quality, products containing brand names and labels may reduce the probability of product failures. In marketing products such as apples, Arfini et al. (2008) demonstrated that one of the strategies of supermarkets is to collaborate with producers that already have a good reputation among consumers. This is because a recognisable brand blends with consumers' experience to establish expectations of product quality. According to Becker (2000, p.3), reputation of the product is a means to reduce the quality erosion inherent in experience quality attributes.

In the case of fresh food items that are sold unpacked or unbranded, the absence of brands and names may constrain consumers' ability to make predictions about the quality of the product. This is however, a common experience for Malaysian consumers, given that products such as fresh meat and fresh fruit and vegetables are sold unpacked and without labels or brand names, particularly within traditional retail markets. Ou et al. (2006) agreed that this is the norm for grocery products such as meat, fresh fruit and vegetables, where brands are usually absent. In brand absent circumstances, Dawar and Parker (1994) and Bell (1999) [cited in Ou et al. 2006] found that consumers tend to associate the retailer's good reputation with product quality. If the retailers' reputation is favourable, consumers will have higher purchase intentions because they perceive that the products offered by these stores will be of higher quality. It is similar for the case of meat, where crucial information which involves food safety may be lost by the time the product reaches the retail store (Ubilava and Foster 2009). As a result of this, consumers are forced to use indirect indicators such as the reputation of the retailer, gained from experience, to signal product quality.

3.6.3 Satisfaction/Dissatisfaction

The final component of the model is to examine the relationship between quality expectations utilised by consumers during the purchasing process, together with

their experience of consuming the food and their level of satisfaction or dissatisfaction with the product. As indicated by Bredahl (2004), experience quality affects consumers' future purchase decisions. According to Swan and Combs (1976) [cited in Mowat and Collins 2000], satisfaction occurs when the expectations of a product raised at the point of sale are met or surpassed by the experience of consumption. As a result of consumers' satisfaction, acceptance occurs when consumers repeat their purchase. Giese and Cote (2000) mentioned that the definition of satisfaction varies across many research areas. However, the various definitions are similar in several aspects: (1) consumer satisfaction involves an emotional or cognitive response; (2) the response relates to a particular focus such as expectations of the product or consumption experience; and (3) the response occurs at a particular time after consumption or is accumulated over time from the consumers' experience.

According to Rousseau (1987), dissatisfaction is greatest when the product fails to perform its basic functions. Although the literature does not provide a clear conceptualisation of dissatisfaction (Giese and Cote 2000), when consumers are dissatisfied they are more likely to express feelings of anger, disappointment, upset, and to feel cheated or aggrieved.

The response to dissatisfaction is most often focused on the core product attribute – the food does not taste good or the basic product attributes were not delivered. According to Grunert (2005), given that consumers are often not good at predicting experiential quality, this may result in the disconfirmation of expectations and dissatisfaction. Ndubisi and Ling (2005) indicate that dissatisfaction is the opposite of satisfaction, where the product falls short of expectations.

In Wandel and Bugge (1997), about 80% of consumers were well satisfied with the quality cues and quality attributes utilised in their purchase of meat, fresh fruit and vegetables. Acebron and Dopico (2000) mentioned that for products such as meat, consumers could experience either satisfaction or dissatisfaction over the product, given that it is often difficult to purchase meat of the same quality on the next purchase occasion. For fruit products, Brug et al. (1995) revealed that consumer satisfaction and acceptance were the key indicators of success in supply chains.

Henderson (2002) [cited in Shewfelt and Henderson 2003] found that consumers in the US were dissatisfied with the flavour and texture of fresh fruit, whereas for fresh vegetables, they were most often dissatisfied with the appearance.

Liu and McClure (2001) found that the way consumers deal with dissatisfaction varies across western and non-western cultures. In Malaysia, it is typical for consumers not to complain when they experience dissatisfaction with a product, and they often blame themselves (Ramayah et al. 2003).

Hirschman (1970) [cited in Singh 1991] mentioned that consumers have three options when they are dissatisfied; (1) voice; (2) loyalty; and (3) exit. Voice is when consumers direct their complaints to the retailer in an attempt to initiate changes in their future purchases. When consumers actively voice their disappointment over a product or service, Day and Landon (1977) [cited in Ramayah et al. 2003] categorised the behaviour as public or private action. Public action describes consumers' complaining to businesses, private or government agencies, and taking legal actions to seek compensation. On the other hand, private action is when consumers spread negative words about the products or services to warn family members and friends. According to Rousseau (1987), consumers who complain are highly articulate, educated, and have higher standards when selecting products.

Loyalty is when consumers act passively (neither voice nor exit) over their feelings of dissatisfaction. Warland et al. (1975) categorized these consumers as 'the upset but no action' group. These consumers seldom complain, and they continue to stick with dissatisfying products, suffering in silence in the hope that there will be some improvement in the product or service offered (Singh 1991). According to Ramayah et al. (2003), a consumer who does not respond in any manner towards a dissatisfied product, and continues to behave normally to the retailer belongs to this group. According to Rousseau (1987), it is misleading for businesses to rely solely on complaint letters as indicators of their product performance, given that there are many dissatisfied consumers who wish to remain anonymous.

Singh (1991) describes exit as those consumers who voluntarily terminate an exchange relationship by switching their patronage to a substitute product, service,

or shifting to a competitor. Beside complaining or taking actions, consumers reaction to dissatisfaction may include switching stores (Rousseau 1987; Galbreath and Rogers 1999; Liu and McClure 2001; Ndubisi and Ling 2005).

4. A review of the factors influencing the consumer's choice of retail food store[1]

4.1 Chapter outline

This chapter draws on the store choice literature to gain a better understanding of the drivers behind store choice behaviour. The chapter begins by exploring the reasons for the emergence of supermarkets and hypermarkets. Subsequently, the factors which most influence the consumers' choice of retail food store will be discussed. The chapter concludes with a summary and implications.

4.2 Introduction

The modern supermarket first emerged in the USA in the late 1920s and early 1930s (Lo et al. 2001), as traditional retail formats were seen to be cost ineffective and inefficient. Besides offering better products and services to consumers, the modern supermarket was seen to provide a means by which retailers could achieve economies of scale and greater efficiency. By the early 1950s, the supermarket concept had started to expand to other countries such as Japan, Malaysia and the Philippines. By the 1960s, supermarkets had entered Hong Kong and during the 1980s, supermarkets were entering mainland China.

Several push factors have influenced the emergence of modern retail formats across the globe. One of the main factors has been the limited opportunity for supermarkets to expand in their domestic markets. By 1973, the French government had introduced legislation to protect small traditional retailers from the competitive influence of both national and international supermarket chains (Kamah and Godin 2001). Companies such as Carrefour, which were affected by this legislation, had to seek growth opportunities elsewhere. In both Europe and the USA, as domestic markets were already saturated, expansion into the developing economies provided the only opportunity for growth (Wong 2007).

[1] The following chapter was developed from Chamhuri, N. and Batt, P.J. (2009), Factors influencing the consumer's choice of retail food store, Stewart Postharvest Review, 3:1. Published online 01 June.

At the same time, economic growth in such regions as Latin America, Asia and Africa provided pull factors that contributed to the rise of modern retail formats in these regions. An increase in personal disposal income changed both the consumer's lifestyle and their shopping behaviour. Today, consumers are mainly concerned about safe, hygienic and good quality food. As a result of changing lifestyles, modern consumers in Singapore, Malaysia, Thailand, Indonesia and China prefer to shop at supermarkets or hypermarkets which provide convenience, comfort, cleanliness and quality (Glover 1999).

The rapid growth in personal disposable income has also increased the ownership of both refrigerators and microwave ovens (Reardon and Berdegue 2002; Shamsudin and Selamat 2005), which has changed the purchasing habits of consumers. In the past, perishable goods were bought from food markets on a day-to-day basis. As refrigerators have the capacity to store perishable goods for 1 – 2 weeks, consumers now shop less often. It has been reported that 42.0% of consumers visit a supermarket one time per week (Glover 1999). Correspondingly, the percentage of consumers who visit supermarkets more than four times per week is relatively low – about 7.0%. With greater access to refrigerators and the increased private ownership of cars, consumers can purchase and transport larger quantities of goods at one time (Shepherd 2005).

Increasing urbanisation is another factor that has increased the demand for modern retail formats. With more women entering the work force, time is scarce and therefore the demand for convenience is high. Shepherd (2005) described modern families as "cash rich, time poor". Convenience means more than just a one-stop store concept for working women. Modern retail outlets provide convenience for shoppers in terms of providing facilities such as car parking, trolleys and baskets, proximity to other shops, extended trading hours, improved presentation of products, signage, and the width and depth of the product range (Geuens et al. 2003).

Within both developed and developing economies, food safety has become a growing concern among consumers (Shamsudin and Selamat 2005; Shepherd and Galvez 2007; Wong 2007). The high incidence of pesticide residues in fruit and

vegetables, outbreaks of food borne-illness, and food containing unsafe ingredients has enhanced food safety and food quality awareness across the globe. More affluent, highly educated consumers in both Malaysia and the Philippines are willing to pay more for premium branded food in order to obtain more safe and healthy food (Lantican and Esguerra 2006; Wong 2007). Due to food safety preferences, consumers are beginning to purchase fresh produce from modern retail outlets (Tam n.d.). Modern retail outlets have become a trusted source from which consumers purchase food that they believe is safe.

Despite good opportunities for international food retailers to grow their market share in developing countries, the literature often provides contrary evidence (Goldman et al. 2002). While supermarkets and hypermarkets have been operating for quite some time in countries such as Singapore, Hong Kong, Thailand and Taiwan, their market share is reported to be less than 50.0%. Furthermore, the supermarkets share of fresh food sales in both developed and developing countries is often lower than their market share for processed food (Humphrey 2007). Gulati and Reardon (2007) clearly demonstrate that modern retailers have a relatively large market share in non-food items (94.0%), and packaged and processed goods (79.0%). However, supermarkets hold less than 50.0% of the market share for meat (46.0%), fresh fruit (37.0%), poultry (35.0%), fish (33.0%) and fresh vegetables (22.0%).

4.3 Drivers behind store choice behaviours

According to Sinha and Banarjee (2004), store choice is a cognitive process. It is related to the mental processes involved in gathering knowledge and understanding information to decide where to purchase certain products. As mentioned by Alhemoud (2008), store choice behaviour focuses on analysing the principal attributes that influence a consumer's shopping decisions. Alhemoud (2008) added that in determining the preferred place to shop, the consumer's decision to purchase was not made solely on one attribute, but rather, it involved a set of attributes. Solgaard and Hansen (2003) mentioned several store attributes such as merchandise quality, personnel, store layout, cleanliness and accessibility as among the most

important factors which consumers utilised when evaluating the store they intended to visit.

Food can be categorised as fresh and processed. In developed countries, the sales of packaged food is estimated to be more than half of total food expenditure (Batt 2007). However, the sales of packaged food are only one third or less in developing regions. In Southeast Asia, the growth in total food expenditure is increasing at a rate of 5.4% per annum, whereas sales in the food sector are increasing at 7.9% per annum (Digal 2008). It was reported by Hughes (1999) [cited in Batt 2007] that food preparation time in the home is declining. In 1994, food preparation time was estimated to be 15 minutes. By 2010, food preparation time is expected to fall to just eight minutes. This implies that speed and convenience are important meal preparation attributes, leading to an increasing demand for semi processed food and convenience food which can best be satisfied by shopping from modern retail outlets.

A total of seven themes were identified as the major drivers which most influence the consumer's decision to purchase food from either a modern retail outlet or the traditional markets. Although several other factors were identified, these are discussed under various sub-themes. The factors are not ranked according to importance.

4.3.1 Personalised service by traditional vendors

One of the strategies small retailers employ to protect themselves from the large modern retailers is to improve their level of service, rather than to attempt to compete on price (Klemz and Boshoff 2001). Although food is a frequently consumed product, the decision to purchase often entails considerable risk, for at the time of purchase, most consumers are unable to accurately determine the experiential (eating) quality. Therefore, providing superior service to consumers in the form of better quality product and better knowledge is one way of enhancing store loyalty (Sinha and Banarjee 2004; Bustos-Reyes and Gonzales-Benito 2008).

Findings from a study conducted in India revealed the importance of having a good relationship with retailers (Sinha and Banarjee 2004). In order to compete with modern retailers, several traditional "kirana" shops have introduced new services such as home delivery, replacement of defective products and credit facilities. These small retailers believe that excellent service will enhance the shopping experience for consumers, thus increasing the probability that consumers will shop there again.

Traditional retail formats have an advantage in that most have developed close enduring relationships with consumers (Farhangmehr et al. 2001; Goldman et al. 2002; Sinha and Banarjee 2004; Figuie et al. 2006). In Vietnam, with repeat transactions and over time, personal relationships between retailers and consumers develop. Trust is important in the customer-retailer relationship for two reasons (Figuie et al. 2006): (1) when trust is present, consumers, especially from the lower income groups, can get access to credit. Similarly, Baron et al. (2001) identified that traditional retailers had the capacity to offer their regular customers informal credit services; (2) trust is an assurance given by vendors that the food is safe and of high quality. As price is not always a good indicator of product quality, the personalised service provided by traditional vendors provides a concrete reason for many consumers not to purchase from modern retail formats (Sinha and Banarjee 2004).

Gravano (1988) [cited in Placencia 2004] described a corner shop as a place where people know one another. Baron et al. (2001) suggested that respondents identified the success of traditional retailers who rely heavily on: (1) the warm and friendly services being offered, where the shop is seen as serving the community and the owner generally knows most customers by name; and (2) a smooth operation which offers a quick service and a wide range of products. Placencia (2004) suggests that customers who shop at corner shops engaged in social activities with the shop owners such as greeting and leave-taking exchanges, how-are-you inquiries, and queries about health and family. The frequent interactions create rapport between both parties and as a result of this, the shopping experience when visiting a corner shop became more pleasurable. The personalised services offered by traditional retailers are unique and cannot be easily replicated by competitors.

Consumers in developed countries have different reasons for shopping from modern or traditional retail formats. In Portugal, one of the reasons consumers prefer to shop from supermarkets is the wide variety of products available where one can buy everything under one roof (Farhangmehr et al. 2001). Nevertheless, Aylott and Mitchell (1999) indicated that the process of finding goods in supermarkets can turn grocery shopping into a stressful experience. In the UK, consumers report that shopping in supermarkets can be frustrating when consumers are unable to locate a product and sales support staff are not available.

Some consumers may feel that it is important for the store to provide them with knowledgeable and helpful sales assistants. According to Walton and Huey (1993) [cited in Arnold and Fernie 2000], customers are loyal to Wal-Mart as a result of the better treatment they received from sales assistants than sales persons from competitor stores. As mentioned by Arnold and Fernie (2000), shoppers are greeted by the same person at the entrance in order to create recognition and familiarity. This welcoming approach becomes personal for customers, and turned the large warehouse into a familiar neighbourhood shop. Although the presence of sales assistants is essential for infrequently purchased products such as electronic appliances and furniture, they are still valuable in assisting consumers when purchasing grocery items (Burke 2002). Consequently, the attribute labelled as "personnel", which described the friendliness of staff and knowledgeable personnel, was also an important factor for consumers when doing their grocery shopping at supermarkets (Alhemoud 2008). The in-store service provided by these modern retail formats is seen as an approach to maintain and improve the relationship between retailers and their customers.

4.3.2 Competitive price

Price is a convincing tool which attracts consumers to purchase from a particular retail outlet (Farhangmehr et al. 2001; Goldman et al. 2002; Sinha and Banarjee 2004; Skallerud et al. 2009). In marketing, price is the means by which consumers are informed about the value of the product. Invariably, when it comes to price, consumers tend to visit different types of retail store to shop around for the best price. Piachaud and Webb (1996) [cited in Ellaway and Macintyre 2000] revealed a

price difference of 60.0% between the prices charged for several identical food products at supermarkets and corner shops in the UK. Ellaway and Macintyre (2000) revealed that price was an important consideration when purchasing food for consumers who belonged to the lower income group compared to more wealthy consumers. According to Arnold and Fernie (2000), price would be less mentioned by consumers in determining their preferred store choice if the variations were small among competing retailers.

In the early stages of development, modern retail formats first opened in large metropolitan cities that targeted high income earners and expatriates (Lo et al. 2001; Goldman et al. 2002). Generally, these products were sold at higher prices than those prevailing in the traditional retail market. This arises because the modern retail formats often experience high operating costs such as high rent and high wastage. Furthermore, it is difficult to lower the prices of many products as the items offered for sale are imported.

With higher prices portraying an image that shopping at supermarkets is only for the more wealthy consumers, poor consumers choose not to shop at modern retail formats because of their reluctance to associate with more wealthy people (Tam n.d.). Many of them visit modern shopping precincts purely for entertainment.

However, in order to capture a larger segment of consumers, modern retailers have begun to sell basic food commodities (rice) at a much lower price than traditional retailers (Minten and Reardon 2008). Subsequently, other more durable packaged foods such as noodles and oil have also been sold at a lower price to attract more customers. In the late 1990s, modern retailers began to aggressively enter the fresh produce market (Reardon and Berdegue 2002; Minten and Reardon 2008). As a result of this, they were able to offer fresh food products at a much lower price.

There is within the literature, much debate about which retail store format offers the lowest price. From a face-to-face survey of consumer perceptions in Portugal (Farhangmehr et al. 2001), it was reported that prices in traditional retail shops were higher. In Taiwan, data collected by Hsu and Chang (2002) revealed that several fresh meat products in the traditional markets were sold at higher prices compared

with supermarkets. A comparative study by Liese et al. (2007) identified that the prices of meat, fruit and vegetables sold at convenience stores in the US was higher than at supermarkets and grocery stores.

Conversely, in Kenya and Vietnam, consumers buy fresh fruits and vegetables from the traditional market due to the lower price (Tam n.d.). Several focus group participants in the UK revealed that they do not shop at supermarkets because they think that the goods sold there were overpriced (Aylott and Mitchell 1999). A price comparison study in Hanoi, Vietnam, confirmed that food prices in supermarkets were higher than the traditional markets (Tam n.d.).

In Thailand, the Thailand Development Research Institute (2002) [cited in Minten and Reardon 2008] reported that although the prices for processed food products was 12.0% cheaper in modern retail outlets, fresh food items were considerably more expensive (10.0% higher) than what was available in the traditional market. Natawidjaja et al. (2007) [cited in Minten and Reardon 2008] found that fresh tomatoes sold in traditional markets in Jakarta were cheaper than the tomatoes available from supermarkets. In India, Minten et al. (2010) revealed that the prices of fresh produce were not displayed to consumers, given that buyers were expected to bargain on the price with the retailer. On average, the final price agreed by both parties were cheaper compared to similar products sold in supermarkets. Overall, Minten and Reardon (2008) concluded that modern retail outlets were more price-competitive in processed foods such as rice, bread, noodles, sugar and milk, rather than in fresh foods.

In reality, modern retail outlets are capable of offering more competitive prices as they have the advantage of the economies of scale in procurement. Wal-Mart manages to offer products to customers at a much lower price due to their low cost strategy, which includes: (1) volume buying which lowers the cost of goods; (2) assisting vendors to achieve cost reduction; and (3) monitoring competitor stores to ensure that the products available at Wal-Mart are always the lowest priced in the market (Arnold and Fernie 2000). Furthermore, competition between the major retailers will drive prices downward (Arshad et al. 2006).

4.3.3 Food quality and safety

The concept of quality is essential to bring value and satisfaction to the consumer (Oude Ophuis and Van Trijp 1995). According to Batt (2007), quality is a multifaceted concept that can be defined differently according to individual perceptions.

In the past, consumers were primarily concerned about purchasing goods at a low price. Today, consumers have shifted their focus towards quality and gaining value for money. In Greece, consumers have indicated quality and variety as the key determinants in deciding from which store to purchase groceries (Baltas and Papastathopoulou 2003). In Scotland, McEachern and Schroder (2002) identified quality and taste as the most important criteria in selecting fresh meat. In Spain, consumers mentioned the importance of price, quality and the brand (Flavian et al. 2001). Among Japanese consumers, quality and freshness were most valued (Kawahara and Speece 1994). In Vietnam, consumers considered quality and freshness when purchasing fresh produce from either modern or traditional outlets (Figuie 2003). This is similar among the Nepalese, where quality was ranked as the most important attribute in the decision to purchase fresh produce (Singh 2006).

With higher education and increasing income, consumers are becoming more demanding. In the UK, major supermarket chains are creating their own identities by selling products that carry their own label (Brookes 1995; Pattanatorn and Sutton 2007). Tesco has introduced own-label produce to create an overall quality image for the retail chain. Although most fresh produce is sold in pre-packs, loose produce with no brand name or packaging is still available. Tesco's own-label provides three different brands to cater for three different consumer market segments. Sainsbury's are attempting to compete in the fresh produce sector by positioning themselves in the market with the slogan "Good food costs less at Sainsbury's". Loblaws from Canada has introduced a "President's Choice Green" range of products (Brookes 1995). Foodtown in New Zealand have introduced the slogan "Quality costs no more" for their fresh produce range.

However, some supermarkets sell fresh produce at a higher price. These retail outlets charge higher prices because they focus on quality (Minten and Reardon 2008). For example, supermarkets in Chile are offering top quality meat and fine cuts to serve the demand from high-income shoppers (Faiguenbaum et al. 2002). The apples available in modern retail outlets in India were generally high quality imported fruit (Minten et al. 2010). While Balsevich et al. (2003) suggested that supermarkets offer higher quality produce to compensate for the higher prices consumers have to pay, Minten et al. (2010) suggested that it was difficult for modern retailers to offer food items at a lower price as they had to control for quality.

When buying fresh fruits and vegetables from traditional retail outlets, freshness was the most important quality attribute valued by consumers. In Hong Kong, a study among food shoppers revealed that consumers purchased fresh vegetables from traditional markets as the produce was perceived to be "more fresh" (Kawahara and Speece 1994; Goldman et al. 1999). Given that the vegetables had been delivered directly from the wholesale market and that vendors constantly trimmed, sprayed, cleaned and sorted, consumers perceived the quality to be superior to that available in supermarkets. Faiguenbaum et al. (2002) found that consumers in Chile rejected the perception that better quality produce was offered by modern retail outlets. Consumers perceive that fresh produce in supermarkets has often been stored and refrigerated for some time. Furthermore, consumers added that there was often insufficient choice when buying fresh produce in supermarkets as most of the produce was pre-packed. In Vietnam, consumers perceived that vegetables were fresher if purchased in the wet markets or from street hawkers. Consumers in Vietnam preferred to buy fruit and vegetables daily and in small quantities because eating fresh food was important in their diet (Tam n.d.).

4.3.4 Convenience

According to Reimers and Clulow (2004), convenience takes place when the barriers in accomplishing an activity are reduced or totally eliminated. The concept of convenience is related to consumers' effort, in terms of their mental and physical

energy, spent in buying, storing and preparing food (Buckley et al. 2005). In retailing, the concept of convenience is determined by the attributes which influence the spatial, temporal and effort costs of patronage (Reimers and Clulow 2004).

As mentioned by Boyle (2002), Reimers and Clulow (2004), Buckley et al. (2005) and Scholderer and Grunert (2005), there are several motives why the importance of convenience is growing among shoppers. The motives were identified as: (1) the increasing levels of consumer awareness, affluence and mobility; (2) time insufficiencies (longer working hours); (3) the changing role of women (from a homemaker to full or part-time employment); (4) an increase in the number of male shoppers, and (5) the size of the family. Popkowski Leszczyc et al. (2004) indicated that as the demands of professional and personal life have increased, this has resulted in shopper's desire to minimise the time spent shopping.

According to Kirby (1986), small independent food and grocery stores have continued to prosper because they offer convenience to their patrons in terms of location (close to the house), parking facilities, offering a wide range of goods, and longer trading hours. However, Peston and Ennew (1998) [cited in Baron et al. 2001] argue that the concept of convenience, as portrayed by traditional retailers, is gradually shifting to supermarkets and hypermarkets.

In response to the consumers' need for convenience, the major retailers have developed a mix of retail outlets. The concept of one-stop shopping applies when supermarkets or hypermarkets are built, for they attract other stores such as bakers, post offices and banks under the same roof. For instance, traditional grocery stores in Canada are transforming into large superstores, where shoppers have the opportunity to purchase clothes, toys and crockery at the same time (Popkowski Leszczyc et al. 2004). In Malaysia, Shamsudin and Selamat (2005) reported that shoppers in urban areas prefer to purchase from supermarkets and hypermarkets because of the one-stop shopping experience. Ahmed et al. (2007) suggested that the one-stop convenience concept has also resulted in the emergence of service outlets such as food-courts and restaurants, as well as entertainment outlets like video arcades, bowling alleys and cinemas. According to Kaufman and Lane

(1996), the chance for success is higher when a shopping centre delivers a clear and well-positioned mix. Without a mix of outlets, for the convenience seeking shoppers, there is a greater of possibility of them visiting another retail outlet. Popkowski Leszczyc et al. (2004) added that the latest trend in food shopping is towards multi-purpose shopping behaviour, which contradicts earlier findings which assume that shoppers tend to visit the nearest store when buying food.

Darian and Cohen (1995) [cited in Scholderer and Grunert 2005] suggested that the concept of convenience could be examined from the savings in time and the physical or mental energy which shoppers expend when purchasing food from their preferred retail store. Chetthamrongchai and Davies (2000) have grouped the 'time-pressured convenience seekers' as those shoppers who are young, educated, and have good jobs. However, they were found to dislike food shopping. Given that time is valuable for them, they purchase in bulk, perform one-stop shopping at supermarkets and hypermarkets, drive their own transport to and from the retail store and are less likely to purchase from other stores which are located some distance from their house or office. In Boyle (2002), the concept of one-stop shopping is described when the shopper goes to one store and purchases in bulk for a time period (of a week or a fortnight) to save on time and travelling costs. In a similar study, Scholderer and Grunert (2005) found that shoppers, who have a positive attitude to convenience shopping, see little value in shopping from speciality food shops.

Longer trading hours are also perceived to be more convenient. Supermarkets and hypermarkets are open most evenings, on Sundays, and some even offer 24 hour shopping (Kaufman and Lane 1996). In Belgium, many respondents emphasised the importance of convenience when shopping, and would like to see retailers open until late at night (10 or 11 p.m.) everyday (Geuens et al. 2003). In Australia, Jacenko and Gunasekera (2005) noted that larger supermarkets have extended trading hours, enabling consumers to shop in one location at one time. As a result of the deregulation in trading hours in Australia, small retailers have lost their competitive advantage and are struggling to compete against the large retailers.

Besides the temporal aspect of convenience, several other characteristics also describe convenience in shopping, including the usage of trolleys and baskets, easy access to products, easy parking, quick/fast checkouts and payment methods. The trolleys and baskets provided by most supermarkets and hypermarkets are seen as a convenient device to transport groceries inside the store and from the store to the car (Zinkhan et al. 1999; Geuens et al. (2003). In Pettigrew et al. (2005), trolleys were perceived to be the second most important service element by supermarkets in meeting the needs of older shoppers. On the other hand, consumers were required to bring their own shopping basket when purchasing from the traditional market, which was an inconvenience for most shoppers.

Adebanjo (2001) noted that the accessibility of the product on the shelf was among several factors which determined the level of customer satisfaction within a retail store. Female shoppers rated the ability to reach products more importantly than male shoppers (Pettigrew et al. 2005). However, many respondents indicate that supermarkets do not always cater to the consumers' needs for product accessibility because they often experienced some difficulties in attempting to reach products on high shelves. Conversely, older consumers prefer to purchase their groceries from local stores as it was easier to access the product (Ong and Phillips 2007).

Geuens et al. (2003) revealed that shoppers dislike looking for a parking space when doing their grocery shopping. Therefore, it is an absolute necessity for retailers to provide a large parking area for their patrons. In Brazil, shoppers mentioned that it was more convenient to purchase food from supermarkets because of the ease of parking their cars compared to the traditional market (Zinkhan et al. 1999). Similarly, in Hsu and Chang (2002), more working women were found to shop from supermarkets because of easy parking. However, Abu and Roslin (2008) reveal that some Malaysian consumers prefer to shop for food from grocery stores because they are more convenient and it was possible to park closer to the store.

A fast checkout was among the factors in determining food store choice by consumers in the developed countries (Goldman and Hino 2005). Elderly consumers in Malaysia revealed that the existence of long queues at checkout counters was an inconvenience they experienced when purchasing from

supermarkets (Ong and Phillips 2007). Conversely, the experience of paying was less stressful in most grocery stores as there was no need to wait and no long queues (Abu and Roslin 2008).

According to Klee (2004), there is a correlation between the method of payment and the number of items bought at a particular store. These findings suggest that consumers who purchase a large amount of goods are more likely to use credit cards, while consumers who purchase less are more likely to pay by cash. Therefore, the usage of credit card facilities is higher in supermarkets and hypermarkets. According to Zinkhan et al. (1999), the credit card is a popular method of payment when consumers shop at supermarkets. Similarly, credit cards were the most preferred method of payment when consumers purchased from supermarkets in Turkey (Kurtulus and Nasir 2006). Although elderly consumers have access to credit facilities, Ong and Phillips (2007) reveal that the preference for this type of payment was low when purchasing groceries. Conversely, Sinha and Banarjee (2004) found that some consumers prefer to shop from traditional shops because they were able to buy on credit or to repay in instalments.

4.3.5 Proximity

Where the food retail outlet is located has been found to be an important factor influencing the consumer's choice of retail store. Brown (1991) considers location to be among the most important factors attracting shoppers to purchase from a retail store. However, retail location is a multifaceted construct that considers: (1) the consumers' preference to visit the nearest store where the goods they want are available; (2) the distance consumers are prepared to travel in order to make the purchase; (3) personal mobility, and (4) the trip frequency.

Goldman et al. (2002) identified the importance of location compared to other factors such as price and assortment in the consumers' choice of retail food outlet. Ellaway and Macintyre (2000) ranked location and the accessibility of the shop higher than the service provided by the retailer and the price. Similarly, Yilmaz et al. (2007) found that consumers placed great importance on a convenient location (closeness of store to personal residence and accessibility to the market).

Consumers in India have also indicated how important proximity is when purchasing fresh fruits and vegetables from a retail store (Sinha and Banarjee 2004).

There is a relationship between the proximity of the store chosen by consumers and the travelling time (Lo et al. 2001; Goldman et al. 2002; Sinha and Banarjee 2004). Assuming each factor influences store choice equally, consumers will decide where to shop based on the minimum travel time to the nearest retail store (Lo et al. 2001).

This then leads to a discussion on the mode of transport. Most modern retail outlets are built in central locations. However, they are more accessible by car. Therefore, higher income earners have fewer problems gaining access to the shopping precinct. Besides providing a greater variety of product at lower prices, the ample free parking offered by modern retail formats attracts consumers (Farhangmehr et al. 2001).

Lo et al. (2001) report that modern retail outlets are usually first established in large metropolitan cities to serve expatriates and high-income earners. More affluent consumers, it seems, are more readily able to change the location where they shop. Furthermore, higher income consumers have more storage and transport options and prefer the convenience of one-stop shopping. Conversely, lower income groups value more the social interaction and service provided by traditional retail formats (Goldman et al. 2002).

Which retail format is closer to home is considered an important driver for consumers. A study conducted in Vietnam demonstrates that the main reason consumers shop at traditional retail formats was because that retail outlet was located near to their home (Tam 2006; Figuie et al. 2006). Frequent purchasing among low income groups in Vietnam is more common, due to limited storage capacity and the inability of low income consumers to afford the time and travelling cost incurred in shopping from supermarkets. Similarly in China, where bicycle ownership is more common than owning a car, the limited carrying capacity and limited storage space in the home prevents most consumers from buying in bulk from supermarkets (Lo et al. 2001).

Besides income, the choice of retail store can also be influenced by other demographic characteristics of the consumers such as age and lifestyle. Lumpkin et al. (1985) [cited in Oates et al. 1996] mentioned that location and easy parking were among the primary determining factors of store choice for elderly consumers. Oates et al. (1996) found that older consumers who were retired but still active in sports or politics, or an active member of an association, had a limited time to shop. As a result, they select those stores which are in close proximity to where they live. In contrast, Ou et al. (2006) found that elderly shoppers who are retired have more time to travel and to shop around compared to younger shoppers.

4.3.6 Promotion

Promotion is a communication program which aims to create awareness, as well as to build and maintain relationships by informing and persuading customers to view the product and/or organisation favourably (Pride et al. 2004, p.138). Rix (2007, p.430) reveals that promotion is an element of the marketing mix which aims to inform, persuade or remind the market about a particular product and/or organisation. Rix (2007) added that the ultimate objective of promotion is to influence consumers' feelings, beliefs and behaviour. Consequently, through promotional activities, retail stores may increase their turnover by achieving a higher penetration rate in the market, increase the frequency of shopping and increase the average amount spent in the store (Volle 2001). In this section, the discussion will focus on loyalty programs, advertising and in-store tasting as various in-store promotional methods which may influence consumers' store choice and purchasing decision.

Sharp and Sharp (1997) describe loyalty programs as structured marketing efforts which provide customers with loyalty incentives such as points redeemable for prizes or discounts. Similarly, Leenheer et al. (2007) defined loyalty programs as an integrated marketing system which aimed to transform members into loyal shoppers. According to Demoulin and Zidda (2008), loyalty programs are part of a defensive marketing strategy offered by retailers.

One of the advantages of offering loyalty cards to shoppers is the information acquired about customers shopping behaviour. According to Mauri (2003), the data gathered from customers (who are they, frequency of purchase, buying behaviour) is then transformed into knowledge to develop more effective marketing strategies. In addition, Sharp and Sharp (1997), Uncles et al. (2003) and Demoulin and Zidda (2008) mention that loyalty cards create a better relationship between retailers and their customers.

Most major grocery retailers including Tesco (ClubCard), Sainsbury (Reward Card) and Safeway (ABC Card) introduced loyalty cards in the 1990s (Mauri 2003). The largest consumer loyalty program in Australia is Coles Fly Buys (Sharp and Sharp 1997). Shopping points were offered to loyal customers for store patronage, which can then be redeemed for free air travel or hotel accommodation. ACNielsen (2005) [cited in Demoulin and Zidda 2008] reported that European and American shoppers were often members of several loyalty programs with a number of grocery retailers. However, customers who are satisfied with the reward schemes offered by a specific retailer are less likely to be influenced by other reward schemes offered by competitors.

According to Sharp and Sharp (1997), loyalty programs are different from other marketing campaigns such as advertising and sales promotions. When an advertising campaign or sales promotion comes to an end, there is a tendency for consumers to revert back to their previous purchasing behaviour, whereas the aim of loyalty programs is to lock customers in.

With regards to advertisements in the mass media, Becker et al. (2000) mentioned that consumers utilised information from advertisements and newspaper articles to know more about news updates such as BSE, the origin and brand of the meat, as well as the quality of the food. Similarly, McEachern and Seaman (2005) reported that consumers in the UK utilised information from the media to gather knowledge about quality standards and information in connection with the food industry. Printed catalogues, advertising on radio and posters as promotional instruments for grocery items were found to have a weak relationship with consumers' store choice behaviour (Volle 2001). Although the findings by past researchers have indicated

that promoting food items through the media have little impact on store choice, retailers should not stop advertising.

In-store tasting is another strategy that may be utilised by retailers. According to Barlow et al. (2004), retailers who allow their customers to utilise their senses (taste, sight, smell and touch), by giving them the opportunity to evaluate products in-store will lead to a more rewarding shopping experience. Clark (1998) reported that one major retailer in the UK came up with a campaign called 'try before you buy', which provided an opportunity for shoppers to taste the food before purchase. Other supermarkets have utilised in-store tasting as a means to illustrate the superior taste of organic products to motivate potential buyers (Richter et al. 2000). Retailers found this strategy to be successful in justifying the price premium shoppers have to pay when purchasing organic products. Where the market awareness of a particular product is relatively low, supermarkets have utilised in-store tasting as a marketing strategy to attract more shoppers to purchase fruit (Mowat and Collins 2000). In a similar manner to modern retailers, those who shop at traditional markets in Brazil are often allowed to taste the products prior to making a purchase decision (Zinkhan et al. 1999).

According to Chang and Burke (2007), shopping aids such as in-store tastings may assist shoppers in their decision to purchase when there is insufficient information available about the product.

4.3.7 Demographic characteristics of consumers

In many developing countries, modern retail formats have struggled to gain acceptance. This is due to differences in demographic characteristics between consumers. In Hong Kong, it is not the norm for shoppers to buy fresh produce from supermarkets (Kawahara and Speece 1994).

According to Carpenter and Moore (2006), the individual characteristics of consumers will influence their consumption behaviour. By utilising information which identifies the demographic characteristics of consumers, it is possible for

retailers to segment the market, and thus to respond in a more appropriate way to consumers needs and wants (Baltas and Papastathopoulou 2003; Jin and Kim 2003).

Studies on gender differences have demonstrated some interesting differences between male and female shoppers. Generally, women have a more positive attitude towards food shopping than men (Chebat et al. 2009). Moreover, women perceive food shopping to be more important in their personal life. In both developed and developing countries, females are responsible for the majority of food shopping (Goldman et al. 1999; Ellaway and Macintyre 2000; Farhangmehr et al. 2001; Flavian et al. 2001; Baltas and Papastathopoulou 2003; Ou et al. 2006; Tam n.d.).

Burke (2002) reported that female shoppers were more responsive towards changes in price and promotional variables such as coupons and assistance from salespersons compared to men. Similarly, Alhemoud (2008) reported that female consumers in Kuwait placed greater importance on having friendly and knowledgeable staff to assist them when they shopped compared to males. In the same study, male shoppers were more concerned with the product range and accessibility (parking and ease of walking through the aisles).

In terms of age, supermarkets are the preferred place to shop for young shoppers in China and Hong Kong (Kawahara and Speece 1994; Lo et al. 2001). Burke (2002) described younger shoppers (below the age of 25) as a group of people who perceived shopping as an enjoyable and entertaining activity. Given that their source of income has yet to stabilise, this group of shoppers are price hunters; preferring price reductions and promotions, and are willing to travel to those stores that sell product at the most competitive price. Younger shoppers rely more on the television and the internet to search for product information to compare and evaluate products compared to older shoppers. Furthermore, in a retail store, younger shoppers were more receptive to the use of self-checkout systems to scan and pay for the products they purchased. While older shoppers value assistance from sales people, younger shoppers dislike the presence of sales people because they want to find items in the store themselves (Burke 2002).

Conversely, older shoppers continue to visit the traditional markets (Goldman et al. 1999). In the USA, older shoppers, who were presumably retired, have the time to travel to destination stores compared to younger shoppers who lead a busy lifestyle and have no time to shop around (Ou et al. 2006).

In relation to income, Ellaway and Macintyre (2000) reported that respondents who reside in the more affluent neighbourhoods (particularly females), place greater importance on quality in choosing between retail stores. These findings concur with research conducted by Zenk et al. (2005) who found a positive relationship between income and the propensity to purchase from supermarkets. Similarly, Moore and Diez Roux (2006) concluded that more small grocery stores were found in poorer neighbourhoods, whereas more wealthy areas were found to have more supermarkets.

On the other hand, much of the research shows no relationship between store choice behaviour and demographic variables. Ellaway and Macintyre (2000) found no significant differences between age groups and store choice. Jin and Kim (2003) found no significant difference between consumers' shopping motives and their demographic characteristics.

4.4 Chapter summary

Modern retailers have expanded from their original niche – which previously focused on fulfilling the needs of high income earners, to serve a larger segment of the market (middle class and low income earners, as well as people in rural areas). As a result, consumers have more choice on where to purchase their fresh food.

From this review, it was evident that there is an emerging body of literature that discusses the future of small independent retailers operating in traditional markets. Traditional markets will continue to survive as many consumers still appreciate the benefits that they bestow. Nevertheless, there is a tendency for more affluent food shoppers to change their shopping habits and shift towards modern retail outlets. Competition will intensify for traders, vendors and hawkers in the traditional market to remain in business.

The literature review disclosed that one of the strengths of traditional retailers is offering a personalised service which is much appreciated, more so by their female customers. Modern retailers are aware of this and have started to narrow the gap. If they are to survive, traditional retailers must find an additional means of differentiating their product offer to encourage shoppers to continue purchasing from them. One of the greater challenges for traditional retailers is to provide safe and high-value fresh food to their consumers, due to the lack of capacity in terms of storage space, a clean display area, and efficient transportation from suppliers to retailers. Although the safety and quality requirements impose higher costs, traditional retailers should endeavour to improve their standards to improve their image, as well as to gain the consumers' confidence. As highlighted by Reardon and Gulati (2008), it is important for government to assist small retailers to meet the challenges and requirements of the modern food marketing system.

5. Preliminary research methodology

5.1 Chapter Outline

Little information is currently available to identify the criteria Malaysian consumers employ when purchasing fresh food from various retail outlets. In the first exploratory stage of the data collection process, this chapter will discuss the focus group interviews which were used. The chapter will describe the exploratory research design, preliminary research objectives, sample selection, interview format and the structure of the survey instrument. The chapter concludes with a description of the transcription procedure.

5.2 Research design: qualitative research method

From the literature review, it soon became apparent that there was a paucity of information regarding consumers' perceptions and experiences in purchasing fresh food from retail outlets in Malaysia. In the absence of any empirical literature, given that the research problems identified were new to Malaysia and to the researcher, an initial qualitative research approach was considered to be the most appropriate means of addressing the research problems. Qualitative research is an unstructured exploratory research methodology which seeks to gain a qualitative understanding of the underlying reasons and motivations that most influence consumer decision making (Szwarc 2005; Malhotra et al. 2008). Daymon and Holloway (2002) consider a holistic focus to be one of the characteristics of a good qualitative research design. By having a holistic focus, qualitative researchers have the opportunity to gather a wide range of interconnected experiences, beliefs and values from respondents.

Small-scale studies are the norm in most qualitative studies as the main objective of the approach is for the participants to provide rich, detailed and holistic descriptions of the subject material being discussed (Daymon and Holloway 2002). Additionally, the need for the researcher to be actively involved in the data collection process was highlighted. The researcher is seen as the main 'research instrument' as he or she is engaged closely with the people being studied.

The two main benefits of conducting qualitative research is for; (1) the researcher to be able to hear the language consumers use to describe their experiences in dealing with the product; and (2) the researcher is able to identify a range of issues highlighted by consumers which may be considered important for the research (Szwarc 2005).

Malhotra et al. (2008) further classified qualitative research procedures on the basis of whether the objectives of the research were disclosed to the participants (direct approach) or disguised (indirect approach). In this study, participants were informed about the main purpose of the research study. A direct approach which involved focus groups and in-depth interviews was used to obtain the desired information.

In this preliminary study, focus group interviews provided the principal means of data collection. According to Sim (1998, p.346), a focus group is defined as a group interview – centred on a specific topic (focus) and facilitated and co-ordinated by a moderator or facilitator – which seeks to generate primarily qualitative data, by capitalising on the interaction that occurs within a group setting. Krueger and Casey (2000) claimed that a focus group is a special type of group in terms of purpose (listen and gather information), size, composition and procedures. Both researchers added that focus groups are seen as a method to better understand how people feel or think about an issue, product or services. Malhotra et al. (2008, p.119) defined focus groups as a group interview within a small group of participants, conducted by a trained moderator, in a non-structured and natural manner. Through a guided discussion, participants within a focus group discussion are allowed to interact with each other in a way that uncovers a range of insights on the topic of conversation (Szwarc 2005).

In comparison to in-depth interviews, focus groups allow participants to discuss, react to and to build upon the responses given by other group members. This method enables the researcher to identify subtle differences in responses and to ask follow-up questions immediately based on the responses given (Stewart et al. 2007). In addition, the type and range of data generated through the social interaction of the group are often deeper and richer compared to one-to-one interviews (Thomas et al. 1995).

According to McNeil (2005), in-depth interviews are a popular qualitative method in business-to-business research. In-depth interviews are normally used to get information from managers or from experts in a particular industry, whereas focus group interviews are an effective strategy in consumer research (Threlfall 1999). Given that in-depth interviews require more time, Kaar (2007) did not recommend this approach to researchers who face time constraints. Furthermore, given that in-depth interviews involve higher costs, this technique was considered inappropriate for this study.

To enhance the argument why focus groups were more appropriate for this study, Malhotra et al. (2008) suggested a few advantages of conducting focus group interviews as a data collection method. These included: (1) discussion in a group enables the researcher to gather more information compared to an individual interview; (2) bandwagon or synergistic effects often emerge where a participant's comment will trigger responses from other participants; (3) participants' responses are often spontaneous, which enhances the accuracy of their views; (4) more ideas emerge in a discussion rather than in an individual interview, and (5) focus group interviews are often flexible and more accommodating of the topics covered.

Stewart et al. (2007) mentioned that among the benefits of focus group interviews were: (1) the direct interaction between the researcher and participants, which provide opportunities for further clarification of responses, follow-up questions and for probing of responses; (2) the researcher is able to observe nonverbal responses and facial expressions which may support participants' responses; and (3) with the open response format, the researcher expects to obtain large and rich amounts of information in the participants' own words.

In the absence of any substantial body of literature on the factors influencing the consumers' choice of retail store in Malaysia, focus group interviews were considered to be the most useful and cost effective means of obtaining the data. Focus group interviews have been widely used in exploratory research and are a popular technique to gain a preliminary understanding of consumer preferences (Zeithaml 1988; Verbeke and Viaene 2000; Harper and Makatouni 2002).

Nevertheless, as highlighted by Thomas et al. (1995) and Rabiee (2004), the participants of a focus group cannot be considered as representative of a specific population. Thus, the findings arising from the discussions cannot be utilised in any statistical way nor can any inferences be made about the population from which they have been drawn (Szwarc 2005). As a result, the findings from this first phase of the study were considered to be preliminary and to precede a subsequent quantitative procedure.

5.3 Preliminary research objectives

The objectives of this preliminary research study were to identify:

1. the type of fresh food (fresh/chilled meat and fresh fruit and vegetables) that consumers most often purchased;
2. the criteria consumers used in their choice of retail store when purchasing fresh food;
3. differences in the perceived quality of fresh food between modern retail outlets and traditional markets;
4. consumers' preferences for self selecting and purchasing pre-packed fresh food; and
5. consumers' perspectives of fresh food quality and food safety in particular.

In addition, the preliminary study was also designed to seek answers on various sub-topics associated with the consumption of fresh/chilled meat and fresh fruit and vegetables including:

Topics on fresh/chilled meat	Topics on fresh fruit and vegetables
(a) How consumers cook [chicken/beef]? (b) Consumers' preference for different types of [chicken/beef] cuts. (c) The criteria consumers utilised in making their decision to purchase [chicken/beef]. Why the criteria are important in their decision to purchase [chicken/beef]? (d) The price consumers normally pay to purchase [chicken/beef].	(a) How consumers prepare [potatoes/spinach/apples]? (b) The criteria consumers utilised in their decision to purchase [potatoes/spinach/apples]. Why the criteria were important in their decision to purchase [potatoes/spinach/apples]? (c) The type of [potatoes/spinach/apples] most often purchased. (d) The price consumers normally pay to purchase [potatoes/spinach/apples].

5.4 Sample selection

Initially, participants were selected on the basis of convenience sampling. Convenience sampling is defined as a non-probability sampling technique that attempts to obtain a sample of convenient elements (Malhotra et al. 2008, p.272). Malhotra et al. (2008) confirmed that convenience samples were suitable for focus group interviews, pre-testing questionnaires or for the conduct of pilot studies.

Initially, the sample was drawn from the social network of the researcher (colleagues, friends, neighbours and relatives). After participating in the discussions, respondents were then asked to identify other potential participants who might be interested in joining the next group discussion. This approach is also known as the snowball sampling technique (Malhotra et al. 2008).

The benefits of both sampling techniques were that participants were easily reachable and it involved less time to gather them on each occasion. Nevertheless, convenience sampling has many potential sources of bias.

Although convenience sampling was utilised in this research, the researcher had to select and screen participants thoroughly. Rabiee (2004) emphasized that members of the same focus group should feel comfortable with each other, and as recommended by Krueger and Casey (2000), participants should share similar characteristics. The more homogeneous the membership of the focus group, the more confident individual group members are likely to be in voicing their views (Sim 1998). For instance, participants in the same focus group discussion should be of the same gender, age-range, ethnicity and social class (Bloor et al. 2002). According to McElroy et al. (1995), the rule for selecting focus group participants should be ‘commonality, not diversity’. Bloor et al. (2002) revealed how groups that are too heterogeneous often result in conflict.

To ensure that each individual gets along easily with other group members, trust and rapport must be established before embarking upon the group discussion (Krueger and Casey 2000). Trust amongst the members of the group will encourage the expression of views and opinions. This is a crucial factor, particularly when not

much information is available on the focal topic and the data from the focus group interviews are to be used to formulate and design a larger-scale study. In a study by Rabiee and Thompson (2000), all participants knew each other and felt comfortable talking about several personal issues and were able to express their views on how to widen participation. Kitzinger (1994) discussed the advantage of having acquaintances in the same group discussion so that they could relate to each other's comments. Nevertheless, researchers like Thomas et al. (1995) prefer newly-formed groups which consist of participants who do not know each other. Without prior social contact, participants were found to be more honest, spontaneous and to have a wider range of responses. The focus group discussions for this research were comprised of participants who brought along their friends and participants who were new to each other. At the beginning of every discussion, each participant was asked to introduce themselves to other group members. Participants were also grouped according to similar characteristics as suggested by Kitzinger (1994), McElroy et al. (1995), Sim (1998), Krueger and Casey (2000), Rabiee and Thompson (2000) and Rabiee (2004).

There is within the research community, considerable debate about the optimum number of participants in each focus group. Small groups, which consist of four to six participants, have been used by Strong et al. (1994). A group of between six to eight participants was suggested by Krueger and Casey (2000). Rabiee (2004) suggested that a group was manageable when there were between six and ten participants. A group of this size was described as being large enough to gain a variety of perspectives and yet small enough not to become disorderly. According to Malhotra et al. (2008), each group should be comprised of between eight and 12 members. Szwarc (2005) suggested that a focus group should gather from eight to ten people. Groups with less than eight participants are unlikely to generate the momentum for a successful group discussion and there is always the risk that one or two participants may withdraw at the last moment (Bloor et al. 2002). Groups which are too large can become difficult to moderate and some participants may not have the opportunity to express their views.

A total of four focus groups were organised between October and November, 2007, in Kuala Lumpur. Participants for the focus group discussions had to be the primary

food shopper for the household. With regard to the number of participants, nine participants were recruited for Focus Group 1 (FG1), 15 participants for FG2 and FG4, and only six participants for FG3.

According to the literature, the number of focus group interviews required is also subject to some debate. There is however, a general consensus that more than one focus group discussion should be conducted (Vaughn et al. 1996; Krueger and Casey 2000; Stewart et al. 2007). According to Szwarc (2005), if only two focus group interviews are conducted and the results differ, then it is necessary to conduct another discussion in the hope that the best two will provide the researcher with reliable information. Conducting more focus group discussions will tend to increase the reliability of the resulting data. However, Krueger and Casey (2000) and Daymon and Holloway (2002) suggest that the number of focus groups necessary may be only three or four. Ideally, the number of focus group discussions should continue until such time as a clear pattern of responses emerge and subsequent focus groups produce repetitious information. When a series of focus groups discussions are analysed simultaneously, the researcher will be able to determine a point at which there seems to be consensus on the range of issues raised by participants (Sim 1998). According to Krueger and Casey (2000), when no new issues are mentioned, saturation has occurred and no further groups need to be conducted.

In this research, the responses obtained from FG3 started to become repetitious. Nevertheless, the researcher undertook FG4 with the intention of obtaining responses from a mixed aged group. The majority of participants from FG1 and FG3 were mature age whereas the participants from FG2 were from a younger age group.

All focus group interviews were held in one of the seminar rooms at the Faculty of Economics and Business, National University of Malaysia (UKM), Bangi. The main reason to hold the discussions at a specially designed location was because the seminar room was equipped with recording facilities (audiocassettes). Furthermore, there was a need for the researcher to utilise the whiteboard within the seminar room. There were a few questions where the answers needed to be recorded on the

whiteboard to elicit further discussions from the participants. Even although the focus group interviews were held in a seminar room, the researcher ensured that the discussions were conducted informally and in a relaxed manner to encourage spontaneous comments from participants. Szwarc (2005) emphasised the importance of comfort to ensure participants felt relaxed and were at ease during the discussions. Refreshments were also provided for participants. As an appreciation for their time, participants received a cash payment of RM75 (AUD25) and a souvenir bag.

5.5 Interview format

Each focus group discussion followed an interview guide which consisted of a check list of questions on several sub-topics. The interviews were conducted by a moderator who facilitated the group discussions. According to Krueger and Casey (2000) and Szwarc (2005), a skilful moderator plays an important role in managing a group discussion. The moderator has the responsibility of managing existing relationships between participants, and to create an environment in which participants who do not know each other are encouraged to exchange views (Rabiee 2004). The moderator must also ensure that enough time is spent on each pre-determined topic, that no single participant dominates the group and each participant is given an opportunity to express their opinions (Szwarc 2005). Millward (1995) suggests that the role of a moderator is to learn from participants, rather than the reverse. Carey (1994) pointed out that a moderator should make sure that discussions happen between group members, rather than between participants and the moderator. Nevertheless, a moderator should not be so dominant in a discussion, as this may lead to bias (Goldman 1962).

In comparison to Westerners, Asian people are less open and have been conditioned to keep their opinions to themselves (Focus Groups in Asia n.d.). This presented one of the main challenges in conducting focus group interviews in Malaysia. As a result, the researcher selected a moderator, who was a lecturer of communication studies from the Islamic Science University of Malaysia (USIM), who was experienced in conducting focus group interviews and was very skilful at encouraging participation.

Although the interview guide was drafted in English, the focus group interviews were conducted in the Malay language. Malay language was used as a medium of communication because not all participants were competent in English. Participants are normally more comfortable communicating in the language that they best understand (Mokhlis 2006). However, several words and English terminology were sometimes used for those who were not fluent in Malay. Although there were a few Chinese and Indian participants in each group, they were comfortable expressing their views in Malay.

At the start of the interviews, the researcher introduced the research topic to participants, explained the objectives of the research, why participants had been chosen, and the expected duration of the discussion. According to Daymon and Holloway (2002), it is crucial for the participants to know that there are no correct answers or wrong answers in the discussion. The researcher is most interested in knowing what participants think and feel about the many issues raised in the discussion.

With the permission of the participants, each session was recorded for subsequent transcription and analysis. Tape recorders are invaluable for focus group interviews (Sim 1998; Lewis 2000). However, it is also recommended by Krueger and Casey (2000) that written notes be taken even when a tape recorder is used. According to Lewis (2000), notes are useable especially when the tape recorder stops while the discussion is still going on. The researcher acted as a co-moderator who took notes and took care of the audio equipment. When recording data, the researcher tried to capture the exact phrases and statements made by participants.

In the introduction phase, it was also important to inform the participants that all information gathered from the focus group interviews would be kept confidential. Participants were also informed that this research has obtained ethics approval from Curtin University of Technology.

Each focus group interview lasted approximately six hours – a 2.5 hour discussion on chicken and beef, a 1 hour break and a 2.5 hour discussion on fruit and vegetables. Although several researchers tend to argue that focus group interviews

typically last from two or three hours (Rabiee 2004; Szwarc 2005; Stewart et al. 2007; Malhotra et al. 2008), this period of time was necessary to establish rapport with participants in order to explore their beliefs, perceptions and ideas regarding two different topics that needed further investigation. At the time participants were recruited, each was advised of the likely time commitment.

5.6 Structured interview content

The next step was to develop a detailed list of questions for the focus group interviews that provided as an interview guide (Appendix 1 and Appendix 2). The interview guide contained a list of questions with several sub-topics on consumers' perceptions and experiences on food quality and the purchasing of fresh food that had been developed from the literature.

The interview guide was formulated following the guidelines provided by Lehmann (1985), Daymon and Holloway (2002) and Stewart et al. (2007). The questions were ordered from the more general to the more specific. To encourage rapport between participants and the moderator, Lehmann (1985) recommended that the interview guide begin initially with several simple descriptive questions. This approach creates an impression that the questions to be asked are easy and uncomplicated, which eventually stimulates a comfortable atmosphere for participants. This approach may also engender the immediate interest of participants (Lewis 2000). In this study, participants were first asked about the type of fresh food they purchased, followed by questions that explored their thoughts and attitudes toward the various products.

An interview guide contains mostly open-ended or unstructured questions. This allows participants to answer in their own words and from a variety of dimensions. Lewis (2000) suggested that questions should be carefully phrased to elicit maximum responses by participants. Stewart et al. (2007, p. 65) state that "questions that include words such as how, why, under what conditions, and similar probes suggest to respondents that the researcher is interested in complexity and facilitate discussion". There were also a few semi-structured questions. The information provided in the semi-structured questions was designed only as a guide

to enable the moderator to encourage discussion during those silent moments that may inevitably arise.

The interview guide in Appendix 1 was divided into seven sections. The interview guide consisted of topics regarding the consumption of fresh/chilled meat.

The target meats for this research were highly influenced by the ethnicity and cultural background of the Malaysian population. Malaysia is a multi-ethnic country which consists of Malay (50.4%), Chinese (23.7%), indigenous (11.0%), Indians (7.1%) and others (7.8%) (The World Factbook 2009). It was reported that 60.4% are Muslim, 19.2% are Buddhist, 9.1% are Christian and 6.3% are Hindu. Chicken was chosen due to the high consumption among Malaysian consumers and the acceptability by most religions (Paraguas 2006). According to the FAO (cited in Tey et al. 2008a) the consumption per capita of poultry was 33.8kg.

Beef was the other target meat for this research. Beef consumption among Malaysians is higher than mutton (Paraguas 2006; Tey et al. 2008a). In 2003, the per capita consumption of mutton was low – only 0.5kg whereas the consumption of beef was 5.8kg (Tey et al. 2008a). While the consumption of pork is high among the Chinese (Paraguas 2006), as the majority of Malaysians are Muslim and the consumption of pork is forbidden, pork was not selected for this research.

Section One: Introduction to the focus group interview

The session began by introducing the researcher and the moderator to participants, followed by the objectives of the research, the purpose of the discussion, obtaining participants' consent to record the discussion, an assurance of the confidentiality of the discussion, and the duration of the discussion.

Participants were then given the opportunity to introduce themselves. Besides breaking the ice, Stewart et al. (2007) mentioned that this establishes rapport within the group when a member introduces himself or herself to the other members of the group.

Section Two: Store choice behaviour

The first question in this section was designed to investigate the place where participants purchased fresh/chilled meat (Becker et al. 2000; Bonne and Verbeke 2006). Participants were also required to indicate the percentage of fresh/chilled meat that was purchased from other outlets and to justify the reasons for purchasing from their preferred retail store (Hsu and Chang 2002).

Section Three: Quality of fresh/chilled meat

Participants were required to indicate how they assessed the quality of fresh/chilled meat and to identify any differences in the quality of fresh/chilled meat between modern retail outlets and the traditional market (Becker 2000). Participants were also required to discuss their preferences for self-selecting or purchasing pre-packed meat. The researcher found that it was important to ensure that the discussion was about quality and did not revolve around price only, as quality could be related to other criteria (Batt 2004).

Section Four and Section Five: The purchase of chicken and beef

Section Four and Section Five contained similar questions. Section Four involved participants' purchase of chicken, while Section Five was about the purchase of beef. The questions revolved around the frequency of purchasing [chicken/beef] in the household, the methods of preparation and cooking, followed by their preferences for purchasing different cuts of [chicken/beef]. These questions were derived from Glitsch (2000), Hsu and Chang (2002) and Goldman and Hino (2005).

The researcher was keen to identify the attributes that most influenced the participants' decision to purchase [chicken/beef]. The literature was used to guide how participants ranked the importance of the attributes of [chicken/beef] with desired values (Hoffman 2000; McEachern and Schroder 2002).

Several photographs of [chicken/beef], taken from various retail outlets, were shown to participants in order to investigate whether they would purchase the [chicken/beef] from the photographs shown. Daymon and Holloway (2002) confirmed that showing photographs that were related to the topic helped to stimulate discussion. The final question in this section required participants to recall

the price they normally paid to purchase [chicken/beef] from their preferred retail outlet.

Section Six: Dissatisfaction with the meat purchased

Participants were asked some general questions about their dissatisfaction with the quality of the [chicken/beef] that they had purchased. An additional question was included to investigate how participants reacted when they were disappointed with their purchase of [chicken/beef].

Section Seven: Food safety issues

Questions in this section were designed to explore participants' level of confidence with the Malaysian food system to manage matters such as Halal, organically produced food, genetically modified food, bacterial contamination and hygiene, animal diseases, hormones, antibiotics and chemicals. In addition, participants were asked about whether they had ever boycotted any particular food product, and to explore the reasons for their action.

Upon completing the first round of the discussion, participants took a one hour break for lunch. After lunch, the second round of the discussion revolved around the purchase and consumption of fresh fruit and vegetables (Appendix 2). Here, the interview guide was divided into eight sections.

Section One: Store choice behaviour

This section began with a question which sought to identify which fresh fruit and vegetables were most often purchased by the participants. There were two main reasons why this question was important. Firstly, not a great deal of research on the consumption of fresh fruit and vegetables among Malaysian consumers has been published. Secondly, since this phase of the research was exploratory, it was crucial to identify which fruit and vegetables were most often purchased by Malaysians.

Other questions revolved around participants' preferred place to purchase fresh fruit and vegetables, the percentage of fresh fruit and vegetables purchased from different types of retail outlets and the motives behind their decision to purchase

from their preferred retail outlet. This group of questions were derived from Zikhan et al. (1999) and Yoo et al. (2006).

Section Two: The quality of fresh fruit and vegetables

The questions in this section were designed to explore the criteria participants' used in evaluating the quality of fresh fruit and vegetables in a retail store (Berdegue et al. 2005). In addition, participants were also asked about their preferences to self select the fresh fruit and vegetables they purchased or to select pre-packs and the reasons for their choice.

Section Three, Four and Five: The purchase of fresh potatoes, spinach and apples

The Food and Agriculture Organisation of the United Nations (FAO) have classified a variety of food crops produced around the world. Among the types of crops identified were cereals, leafy or stem vegetables, fruit-bearing vegetables, citrus, oilseed crops, beverage crops and others (Classification of crops n.d.). Similarly, the Malaysian Department of Agriculture (DOA) has categorised over 50 types of vegetables (leafy, fruit, root and others), or groups of commodities under cash crops (maize, groundnuts, cassava, yam and sweet potatoes) and spices (hot chilli, ginger and lemon grass) (Chong 2007). According to Tey et al. (2008c), with modern retail outlets expanding in urban and rural areas in Malaysia, consumers have more choice as to which fresh fruit and vegetables they wish to consume. In order to analyse a wide range of issues such as the usage of pesticides and fertilisers, the importance of country-of-origin labelling, organic and conventionally grown crops, participants were asked to respond to a number of questions about potatoes (a root/tuber crop), spinach (a leafy or stem vegetable) and apple (a pome fruit).

In all three sections, similar questions were asked of the participants. The first question required participants to discuss the methods of preparation most widely used in the household for potatoes, spinach and apples. Next, participants were required to indicate which attributes they most often used in their decision to purchase [potatoes/spinach/apples] (Baker et al. 1999). Participants were also

required to indicate why these attributes were important in their decision to purchase.

In order to encourage more discussion, several photographs of the three crops taken from both modern and traditional retail outlets were shown to participants. Further discussion revolved around participants' comments towards the photos, whether they would purchase the product and the motives or reasons for their selection. They were also asked to indicate what price they would be willing to pay to purchase the fresh produce illustrated.

Section Six: Dissatisfaction with the fresh fruit and vegetables purchased

This group of questions explored the actions taken by participants when they were dissatisfied with the quality of the fresh fruit and vegetables they had purchased.

Section Seven: Food safety issues

Section Seven consisted of a number of questions relating to food safety issues in Malaysia. Participants were asked to justify the level of confidence they had in the Malaysian food system in terms of managing organically produced food, genetically modified fruit and vegetables, and chemical residues in plants/plant products.

Section Eight: Socio-demographic questions

At the conclusion of the discussion, participants were asked to complete a brief survey form which included several socio-demographic questions.

This contained questions on the age, gender, marital status, level of education, occupation, and ethnicity of the participants. Participants were required to indicate the number of people living in their household. They were also required to declare the town or suburb where they live, their average monthly income and comments regarding the focus group interviews. As most researchers have reported a correlation between demographic variables and the purchase of fresh/chilled meat (Kubberod et al. 2002; Sasaki and Mitsumoto 2004; de Carlos et al. 2005; Verbeke and Vackier 2004) and the purchase of fresh fruits and vegetables (Polard et al. 2002; Pearson 2005), this information was of considerable value.

5.7 Transcription procedure

Focus group interviews ordinarily generate a large amount of data (Rabiee 2004). Krueger and Casey (2000) suggested that the information collected from a focus group discussion should immediately be transcribed and analysed. According to Daymon and Holloway (2002), it is easier to structure information while the details are still fresh in the researcher's mind.

The first step was to transcribe the entire interview. Although the process is quite tedious and time consuming, it was suggested that transcribing the interview is desirable, for it provides a complete record of the discussions which will facilitate the subsequent analysis of the data (Lewis 2000). Without transcribing the interview, the data is at risk of being exposed to the selectiveness of the researcher which may lead to losing much of the richness inherent within the data (Bloor et al. 2002). The researcher found that it was necessary to transcribe the interview in order to conduct a more detailed and rigorous analysis.

The next step is followed by familiarisation with the data (Rabiee 2004). Bloor et al. (2002) suggested that the researcher should listen to the tapes while reading the completed transcript several times in order to familiarise themselves with the data and to check for quality and completeness. At this time, the notes taken by the moderator and the researcher were compared. The aim of this analysis was to identify emerging themes, trends and patterns that may reappear within the discussions.

The data was then encoded in order to make the data more manageable for interpretation. The purpose of coding was to identify and constantly compare similarities and differences in order to formulate categories of interest (Bloor et al. 2002). The coding process was done by making notes in the margins about themes or key issues which emerged from the discussion.

In the next step, the data was organised into several categories. This required the researcher to compact the data and to relate it back to the research objectives. Daymon and Holloway (2002) suggest that the researcher look deductively for

relationships or associations within the data. Patterns in the data were developed from the relationships identified and then related back to the literature.

The data was most effectively managed by developing a long table using Microsoft Word for each question discussed. As suggested by Krueger and Casey (2000), the use of a long table facilitates the content analysis by comparing the words used to answer each question by each group. A frequency column was placed at the end of the table to count how many times a phrase was mentioned in each discussion. The use of this approach is to make an inventory of the points discussed (Bertrand et al. 1992). This method has several advantages. Firstly, this system reduces the vast quantity of information into a more manageable form. Secondly, this system is useful when comparing data from different groups with different socio-demographic backgrounds.

The transcription process for all four focus group discussions was completed within eight weeks. The analysis of the preliminary data is presented in the next chapter.

6. Preliminary research findings[2]

6.1 Chapter Outline

This chapter will discuss the preliminary research findings drawn from the four focus group discussions. The first part of this chapter will describe the socio-demographic characteristics of the participants, followed by the findings from the discussions on fresh/chilled meat and the discussions on fresh fruit and vegetables. The chapter concludes with several implications to address the issues identified.

6.2 Demographics

Participants for the focus group discussions were the primary food shoppers for the household. A total of 45 participants joined the discussions; 9 in Focus Group 1 (FG1), 15 in both FG2 and FG4, and 6 in FG3 (Table 6.1).

As the majority of food shopping is usually done by women, the majority of participants were female. Only one male participant joined the discussion.

In terms of age, participants were spread across all age groups. However, there were more older participants in FG1 (45 to 64 years old) and FG3 (35 to 64 years old), while the younger participants were represented in FG2 (18 to 34 years old). Participants in FG4 were a combination of young and older age groups (18 to 54 years old).

Most of the participants (35) were married.

[2] The following chapter was developed from Chamhuri, N. and Batt, P.J. (2009), Factors Influencing Consumers' Choice of Retail Stores for Fresh Meat in Malaysia, *19th Annual World Food and Agribusiness Forum and Symposium*, 20-23rd June 2009, Budapest, Hungary and from Chamhuri, N. and Batt, P.J. (2009), Consumer Choice of Retail Outlet: Focus Group Interviews in Malaysia, *XVIth International Symposium on Horticultural Economics and Management,* 28th June-2nd July 2009, Chiang Mai, Thailand.

Table 6.1: Profile of focus groups

	FG1	FG2	FG3	FG4
No. of participants	9	15	6	15
Gender	Female (9)	Female (15)	Female (6)	Female (14) Male (1)
Age	45-55 yrs (5) 55-64 yrs (4)	18-25 yrs (4) 26-34 yrs (11)	35-44 yrs (4) 45-55 yrs (1) 55-64 yrs (1)	18-25 yrs (1) 26-34 yrs (10) 35-44 yrs (3) 45-54 yrs (1)
Marital status	Married (8) Others (1)	Single (2) Married (13)	Married (6)	Single (2) Married (8)
Education level	PMR (1) SPM (4) STPM (4)	STPM (3) Degree (10) Post grad (2)	PMR (1) SPM (2) STPM (2) Degree (1)	STPM (2) Degree (10) Post grad (3)
Occupation	Work out (1) Housewife (5) Self-employed (1) Others (2)	Work out (14) Housewife (1)	Housewife (4) Others (2)	Student (1) Work out (13) Housewife (1)
Race	Malay (8) Chinese (1)	Malay (12) Chinese (1) Indian (1) Others (1)	Malay (4) Chinese (1) Indian (1)	Malay (11) Chinese (2) Indian (1) Others (1)

Almost half of the participants held an undergraduate degree (21), while 19 participants had obtained at least some secondary education. The remaining 5 participants had earned a postgraduate degree.

More than half of the participants (28) worked either in the private or government sector, although 14 of the participants were housewives. The remaining participants were either self-employed, students or retired.

As the largest ethnic group in the country, Malays comprised the majority of participants in each group. Five participants were Chinese, 3 were Indian and 2 participants represented ethnic groups from Sabah and Sarawak. Since Malaysia is a multi-cultural country, the researcher purposely recruited a few Chinese and Indians in each group as it was important to capture the different views they possessed on food quality, Halal and other food safety issues. Even the way they consume and prepare chicken and beef is not the same as the Malays, if they eat meat at all.

6.3 Results from the fresh/chilled meat discussion

In general, participants from each focus group purchased beef and chicken from both modern retail outlets and traditional markets. However, the majority of respondents preferred to buy beef and chicken from traditional markets. Freshness and the guarantee of Halal were mentioned by all four groups when participants were asked why they selected traditional markets over modern retail outlets. Nevertheless, there were a small number of participants who chose to buy fresh meat occasionally from modern retail outlets.

A number of factors were mentioned during the focus group interviews which were then integrated under similar themes. A total of eight themes were identified as the major factors which most influenced the consumers' decision to purchase fresh meat from modern retail outlets or traditional markets (Table 6.2).

Table 6.2: Factors attracting consumers to purchase fresh/chilled meat from modern retail outlets and traditional markets

Factors attracting consumers	Modern retail outlets	Traditional markets
Freshness	√	√
Halal guaranteed		√
Good relationship with retailers		√
Good quality		√
Competitive price	√	√
Convenience	√	√
Varieties	√	√
Good environment	√	

√ : represent responses mentioned from focus group discussions

The factors are not ranked according to importance as the purpose of this study was to identify the variables that were most often used by Malaysian consumers in their decision to purchase fresh meat from a retail store.

6.3.1 Freshness

Freshness was often cited as one of the most influential variables impacting on the consumers' decision to purchase fresh meat. In this study, freshness was a factor which attracted consumers to shop at both outlets. The findings of this study are similar to earlier research which indicated that consumers consider freshness

(Munoz 1998; Verbeke and Viane 1999), alongside factors such as the reputation of the place of purchase (Cowan et al. 1999; Hsu and Chang 2002).

According to Kennedy et al. (2004), in order to judge freshness, product appearance (which comprises colour and the physical form of the meat) were utilised. How the product looked was important to judge the freshness of the meat, especially when meat was pre-packaged in retail outlets (Warriss 2000).

At the time of purchase, consumers must rely entirely on visual cues. For instance, in determining the freshness of beef, the meat was expected to have a bright red colour. As one respondent commented:

> 'Colour indicates the freshness of the beef. Red implies that the beef is still new and the cow has just been slaughtered.'

In Malaysia, consumers prefer shopping at traditional markets for fresh meat. They emphasized the freshness of meat in traditional markets, given that fresh meat products were slaughtered early in the morning at slaughterhouses and delivered directly to retailers in various locations. The situation in the traditional markets in Malaysia is similar to Taiwan, where fresh meat is displayed on counters or hung on hooks (Hsu and Chang 2002). Consumers are allowed to touch the meat before deciding which cuts to buy.

The main reason why consumers seek freshness when purchasing meat is associated with food preparation. The majority of elderly participants from FG1 and FG4 indicated that freshness was an important element in the preparation of meals at home. If the products bought were not fresh, the meal would not be tasty or healthy. A participant from FG4 commented that:

> 'Freshness will affect the taste of your food. If the beef is fresh, you can taste the 'sweetness' of the beef in your cooking.'

This finding corresponds to other studies by Zinkhan et al. (1999) and Goldman and Hino (2005). It is important to purchase fresh food to maintain good health and to enjoy the taste of the food. Therefore, fresh food like beef, fish, poultry and fruit are purchased at traditional markets for these are where the requirements for freshness

can best be met (Zinkhan et al. 1999). Goldman and Hino (2005) added that when consumers emphasised the use of fresh products in their food preparation, they were less likely to buy fresh produce from supermarkets.

However, modern retail outlets have the advantage of offering fresh meat in refrigerated display units. Fresh meat in modern retail outlets is pre-cut and pre-packaged in sanitised conditions, then chilled and displayed on temperature controlled shelves (Hsu and Chang 2002). Younger participants from FG2 occasionally purchased beef and chicken from supermarkets as they were attracted to the clean, chilled and nicely packed meat. Furthermore, supermarkets and hypermarkets have the advantage of good retail procurement logistics, technology and inventory management (Reardon et al. 2003). In contrast, the food safety issue in traditional markets is questionable, as the majority of retailers do not have the proper storage space, refrigeration and the knowledge to prevent fresh meat from becoming contaminated.

6.3.2 Halal guaranteed

In Malaysia, the majority of consumers are Muslims. Muslims have to follow a set of dietary laws intended to advance their well being (Bonne and Verbeke 2006). Under these special dietary laws, Muslims are prohibited from the consumption of alcohol, pork, blood and dead meat. They are only allowed to consume Halal meat. Halal is an Arabic word which means permitted, allowed or lawful. When the word Halal is used in relation to food, it means permissible for consumption by Muslims. Beef, chicken or lamb has to be slaughtered according to Islamic rules to guarantee the Halal status of the product.

Several issues on Halal food production in Malaysia have raised concerns among Muslim consumers. For example, chicken meat and pork meat have been found stored together in some supermarkets. Sausages containing non-Halal ingredients have been discovered and several food companies have recently been caught using expired Halal certificates or fake Halal logos (Che Man and Selamat 2005; Zakaria 2008).

When participants were asked what they look for in their decision to purchase beef and chicken, the majority of respondents in all four focus groups indicated the importance of Halal. This finding was similar to Shafie and Othman (2006) who reported that 89.0% of consumers highlighted the importance of Halal in their decision to purchase meat.

The issue of Halal and the relationship between butchers and customers is very close. The basis of this argument is that consumers place considerable value on being served by butchers of the same ethnic race and religion in the traditional market (Goldman and Hino 2005; Bonne and Verbeke 2006). According to one participant:

> 'The question of Halal and where I buy my meat supplies from is important to me and my family. This is why I buy from the same butcher at the same fresh market every time I want to buy beef. I am confident of the source – where the seller gets the beef from'.

The introduction of an Halal logo by the Malaysian Department of Islamic Development (JAKIM) has provided a formal means of quality assurance for Muslim consumers. JAKIM is responsible for verifying and certifying every item which includes food for Halal compliance. Beef and chicken which is slaughtered in Malaysia and available from modern retail outlets carries a Halal logo from JAKIM, while imported beef from Australia carries a 'Fresh Halal Aussie Beef' logo. The Halal logo attached to pre-packs of beef and chicken may provide a significant advantage compared to vendors from traditional markets that do not have Halal certification.

However, this factor alone does not encourage most consumers to buy fresh meat from modern retail outlets. Consumers, especially the elderly, are less likely to buy meat from supermarkets or hypermarkets because they lack confidence (Bonne and Verbeke 2006). The majority of elderly participants from FG1 and FG3 still prefer to buy meat from their preferred butcher. A participant from FG1 commented that:

> 'I will try my very best to avoid buying imported beef as I am not confident with the Halal status of the meat. I wonder why imported beef does not carry Halal-JAKIM labels?'

Another respondent from FG3 added:

> 'I still have doubt with the Halal system in our country. This is why I do not buy my fresh meat from supermarkets. I only buy my beef and chicken from Muslim butchers'.

According to Shafie and Othman (2006), food products with Halal logos have more meaning to consumers than other certificates of assurance. Nevertheless, the institutionalised quality assurance of an Halal logo has only managed to capture younger consumers rather than the majority of consumers. Younger shoppers are more confident with the Halal logo displayed on the packages of beef and chicken sold in modern retail outlets. Furthermore, they are strongly in favour of the Halal label and the slaughtering method for the reason of convenience shopping (Bonne and Verbeke 2006). In this study, younger participants from FG2 and FG4 sometimes buy their fresh meat supplies from supermarkets and hypermarkets, especially on their way home from work. Bernues et al. (2003) agree with this argument and confirm that younger consumers were more likely to use product labels as a source of information.

6.3.3 Good relationship with retailers

Traditional markets constitute a place not only to purchase perishable goods, but also provide a place for meeting acquaintances. Relationships are built not only between vendors and customers, but also between buyers. For example, buyers exchange information about the quality of the products available or which stalls offer the best bargains. Traditional markets are perceived as a place to foster social relationships (Zinkhan et al. 1999).

Personal relationships built between retailers and consumers developed trust for both groups. Zinkhan et al. (1999) stated that the respondents who often visit the street market in Sao Paulo know each other by name and often engage in social conversation. Goldman and Hino (2005) reported a similar result as Arab Israelis prefer to buy fresh meat from a known and trusted source. This ensures customer loyalty as consumers continue to purchase from the same retailer. In this study,

several respondents from FG2 and FG3 made similar statements about the importance of developing a good relationship with retailers:

> 'I only buy chicken from Muslim butchers. This is to ensure that the chicken is being slaughtered according to the Islamic way. I believe that Muslim vendors practice the right way of slaughtering the chicken'.

> 'I recognise very well the vendor. This is why I buy my beef supplies from her'.

Abu (2004) agrees with the importance of personal interaction between vendors and customers which eventually develops customer loyalty. Customers are more loyal to a store which offers warm and friendly service. Vendors in traditional markets often give feedback to customers who are looking for quality products. Factors such as the ability to truthfully answer customers' questions, giving regular customers individual attention and vendors' knowledge of their product attracts customers to shop from a particular retail outlet (Dabholkar et al. 1996). The social environment in traditional markets provides a leisurely experience for consumers which cannot be experienced when shopping at supermarkets or hypermarkets. Furthermore, there are no channels for immediate feedback for customers who shop from modern retail outlets.

It is difficult for small retailers to compete in the market with large and powerful retailers such as supermarkets and hypermarkets. Klemz and Boshoff (2001) suggested that small retailers should compete by improving their service rather than competing on price. Vendors in traditional markets are able to offer numerous services to their consumers compared to modern retail outlets. In Taiwan, for example, a few chickens are kept alive behind counters and slaughtered for customers with special requests (Hsu and Chang 2002). Other services such as chopping, slicing, skinning, de-boning, grinding and packing are also provided by butchers in traditional markets.

6.3.4 Good quality

With increasing income, consumers are becoming more demanding of food quality. According to Sloan et al. (1984) and Steenkamp and Van Trijp (1989), consumers are willing to pay more to purchase the quality food they demand. With more consumers having higher education and being more practical, Farhangmehr et al.

(2000) highlighted the importance of quality, followed by price when purchasing food. Previously, consumers were more concerned about low prices. Currently, consumers have shifted their focus towards quality and gaining better value for money. McEachern and Schroder (2002) confirm that quality and taste were cited as the most important criteria in selecting fresh meat in Scotland.

The majority of participants from all focus groups recognised that there was a difference in the quality of the fresh meat between both retail outlets. Most stated that the fresh meat available from traditional markets was of higher quality compared to that available from supermarkets and hypermarkets. Zinkhan et al. (1999) reported that 88.0% of survey respondents suggested that the quality and freshness of fresh produce was the most important reason why they shopped at traditional markets. Several consumers purchased meat solely from their preferred butcher, as they perceived it to be better quality than the meat sold at supermarkets (McEachern and Schroder 2002).

However, quality means many different things to different people. For Arab Israelis, meat is of high quality when it is freshly killed, still 'warm' and not chilled or frozen (Goldman and Hino 2005). According to Zinkhan et al. (1999), Brazilian consumers determine the quality of fresh meat by touching or smelling the product. These characteristic of quality are better fulfilled in traditional markets, which leads consumers to buy their fresh meat there.

6.3.5 Competitive price

Competitive price was mentioned as a reason for consumers to buy their fresh meat from both outlets. In marketing, price is a powerful and convincing tool to attract consumers to purchase from a particular retail outlet. According to Pride et al. (2004), price is a tool which informs consumers about the value of the product. Value ultimately brings satisfaction to the consumer.

Generally, retail outlets which offer good quality products at a lower price will attract more consumers. According to Trappey and Lai (1997), offering lower prices is an important reason for consumers to shop at supermarkets. The fact that the

price in traditional markets is higher motivates consumers to buy goods from hypermarkets or supermarkets (Farhangmehr et al. 2000). Modern retail outlets are capable of offering more competitive prices for the products they stock as they have the economies of scale in procurement. Furthermore, competition between the major chains is forcing prices down. In Malaysia, Giant, Tesco and Carrefour have engaged in a price war to entice consumers to purchase from their stores. Carrefour has cut prices for about 1,200 products and Giant is reported to have sacrificed profits in order to maintain their low-price leader position in the country (Arshad et al. 2006). While price-wars may be advantageous for consumers, it does put pressure on local retailers to provide a similar price.

However, prices of fresh meat in the traditional market are not always cheaper than modern retail outlets (Farhangmehr et al. 2000; Hsu and Chang 2002). Hsu and Chang (2002) recorded the unit prices of various meat cuts from both retail outlets in Taiwan. Based on the data collected, several fresh meat products in traditional markets were sold at a higher price compared to supermarkets. For example, retailers in the traditional markets in Taiwan sold a whole chicken for $5.80/kg compared to $2.90/kg from supermarkets.

Nevertheless, participants who shop in the traditional markets enjoy competitive prices, for they are allowed to bargain, whereas the price in modern retail outlets is fixed. Participants mentioned that they felt satisfied with their purchases from traditional markets after gaining the product through negotiation with vendors. This cannot be experienced when shopping from modern retail outlets. Zinkhan et al. (1999) argued that the prices of fresh produce in traditional markets tended to be higher only at certain times like early morning. In order to receive further discounts or price reductions, consumers were encouraged to visit traditional markets later in the afternoon. Nevertheless, the trade-off when shopping later is not getting the best quality products.

6.3.6 Convenience

Convenience was mentioned as one of the factors attracting consumers to shop from both outlets. Convenience was seen from the shoppers' perspective as selecting

their preferred shopping outlet based on the hours of operation and travel time (Kaufman 1996). According to Pride et al. (2004), convenience not only saves time, but also reduces stress, cost and other expenditure. Basically, convenience eases consumer discomfort.

Convenience also has different meanings, depending on which retail outlet was chosen and to which age group the respondent belonged. The concept of convenience and location is very much related. Retail location theory states that consumers prefer to shop as close to home as possible (Kaufman 1996). According to Bell et al. (1998), the location of retail outlets indicates where consumers are most likely to purchase their food. Their argument is that consumers are more likely to visit the retail store which brings the lowest total shopping cost. Mui et al. (2003) reported a significant correlation between the place of residence and the retail store that shoppers patronise. In Malaysia, 45.0% of respondents stated that they were willing to spend no more than 15 minutes to travel to a retail outlet. Shoppers prefer to shop at retail outlets which are close to their home or place of work.

In this study, participants who shopped in the traditional markets described convenience as those markets which were close to where they live. Older participants from FG1, FG3 and FG4 mentioned that they had been visiting the same local markets which were perceived to be more convenient for them. Since traditional markets seldom provide any parking place, shoppers who live nearby simply walk to the market. According to Trappey and Lai (1997), traditional markets have an older population of consumers who live nearby and are familiar with and loyal to local vendors. Goldman and Hino (2005) suggest that if the travel distance to supermarkets is greater, then the probability of shopping at traditional markets is higher.

When shopping from a modern retail outlet, convenience means anything that saves or simplifies work and brings comfort to consumers. According to Trappey and Lai (1997), younger consumers who are more occupied with work and family prefer to shop in modern retail outlets for these better satisfy the needs of a faster-paced lifestyle. Convenience for them meant that the store provided facilities such as car parking, trolleys and baskets, proximity to other shops, extended trading hours, a

low level of in-store crowding, good presentation of products, signage, and the desired width and depth of the product range (Geuens et al. 2003). Shoppers who purchase from modern retail outlets do not always live near the supermarkets. Convenience for them meant one-stop shopping.

According to Farhangmehr et al. (2000), convenience makes consumers more practical. Since most goods are available from modern retail outlets, it is more practical to buy everything at the same time from the same place. Besides buying daily necessities, Malaysian consumers were reported to accomplish other activities such as relaxing and dining with family and friends, watching movies, bowling, visiting the hair salon and banking in modern retail premises (Mui et al. 2003). Similar findings were reported by Goldman and Hino (2005). Convenience motivates Arab Israelis to shop at large supermarkets as it is perceived as a family event where all family members participate.

6.3.7 Variety

In the traditional markets, variety means more choice. There are various stalls that sell fresh meat and chicken, fruit and vegetables, fish, traditional cakes and several other ready-to-eat food items. Traditional markets were viewed as 'fresh food supermarkets', providing one-stop shopping for a large variety of fresh foods (Goldman et al. 1999). Zinkhan et al. (1999) reported that the majority of respondents in Sao Paulo shopped for fresh products at traditional markets because of the variety of products available. Vendors in traditional markets are regarded as product specialists, for they provide a deep selection of products from a narrow range of items. If a stall is charging too much, consumers will often visit another stall as there are plenty of alternatives to choose from.

Where consumers decide to shop is also related to the product category. When it comes to beef, consumers can choose whether to buy local beef or imported beef. In this study, the older participants from FG1 and FG3 preferred to visit the traditional markets to buy local beef. Most older participants from both groups seldom buy imported beef. As a result from this, they hardly ever visit supermarkets or hypermarkets. In contrast, the younger participants from FG2 shop at modern retail

outlets to purchase different cuts of beef and chicken. For example, one participant claimed she goes to supermarkets to buy minced chicken and beef steaks which are not available from the traditional market. According to Shamsudin and Selamat (2005), most respondents in Malaysia prefer to purchase fresh produce from supermarkets (41.0%) and hypermarkets (28.0%). The main reason is that modern retail outlets have a greater variety of fresh food which is always available. Conversely, the limited range of products offered by the traditional market is one reason why some consumers prefer to shop at modern retail outlets.

Modern retail outlets are capable of offering a wide variety of food and non-food items. When consumers buy their fresh meat, they can also buy fruit and vegetables, dairy, canned or packed goods, household cleaning products and other non-food items at the same time. Farhangmehr et al. (2000) confirmed that Portuguese consumers preferred to shop at modern retail outlets because of the possibility of buying everything under one roof. When asked why they shop at shopping malls, the majority of respondents in Malaysia cited the variety of shops and products as the main criteria for shopping at modern retail outlets (Mui et al. 2003). Supermarkets and hypermarkets were the preferred place for shopping in general.

6.3.8 Good environment

Store environment and layout may influence the consumer's choice of retail store (Baker 1990). The concept of store image is the way consumers 'see' the store in their minds (Farhangmehr et al. 2000). According to Yalch and Spangenberg (1990), the right use of colour, lighting, sound and furnishings may stimulate perceptual and emotional responses within consumers, which eventually affect their behaviour. Espinoza et al. (2004) state that a good store atmosphere and pleasant surroundings may increase the consumers' willingness to buy.

Modern retail outlets offer a good environment for shoppers. These modern retail outlets are described as clean and comfortable; the store is air-conditioned; it's easier to buy goods with the trolley provided; and modern retail formats are a suitable place to shop and to bring the children. Although the prices of certain items may be relatively higher than traditional markets, consumers still shop at modern

retail outlets due to comfort and good parking facilities (Abu 2004). The good environment provided by most modern retail outlets is used as a marketing tool to attract more customers.

Conversely, participants described traditional markets as crowded and the market was hot and stuffy. This was not dissimilar to how consumers in Hong Kong described traditional markets: dirty, slippery, crowded, smelly, unorganised and noisy (Goldman et al. 1999). According to Hsu and Chang (2002), the floor in most traditional markets in Taiwan is wet and dirty. Furthermore, fresh meat products may be easily contaminated as the butchers do not wash their hands between handling fresh meat and doing other tasks. In Indonesia, many consumers complain about the dirty condition of wet markets and are often robbed by pickpockets (Muharam 2001).

6.4 Results from the fresh fruit and vegetables discussion

Similar to the previous discussion on fresh/chilled meat, the majority of respondents preferred to buy fresh fruit and vegetables from traditional markets. Freshness was mentioned by all four groups when participants were asked why they selected traditional markets over modern retail outlets. However, there were a small number of participants who chose to buy fresh fruit and vegetables occasionally from modern retail outlets.

The factors which most influenced consumers in their decision to buy fresh fruit and vegetables from the two different outlets are summarised in Table 6.3.

Table 6.3: Factors attracting consumers to purchase fresh fruits and vegetables supplies from modern retail outlets and traditional markets

Factors attracting consumers	Modern retail outlets	Traditional markets
Competitive price	√	√
Convenience	√	√
Varieties	√	√
Freshness	√	√
Sales promotions	√	
Good environment	√	

√ : represent responses mentioned from focus group discussions

Similar to the analysis of the findings from the fresh/chilled meat discussion, the factors are not ranked according to importance as the purpose of this study was to identify the variables that were most often used by Malaysian consumers in their decision to purchase fresh food. A total of six themes were identified as the major factors which most influence the consumers' decision to purchase fresh fruit and vegetables from a retail outlet.

6.4.1 Competitive price

Similar to the fresh/chilled meat discussion, competitive price was mentioned as a reason for consumers to buy their fresh fruit and vegetables from both outlets. Most participants from focus groups FG2, FG3 and FG4 believed that modern retail outlets sold fresh fruit and vegetables at a much cheaper price compared to traditional retail outlets, particularly in the form of pre-packs. A participant from FG2 commented that:

> 'Although I prefer to self-select my fruit and vegetables, pre-packs are normally sold cheaper'.

Another respondent from FG3 added:

> 'The cheaper price offered by supermarkets are only to attract customers to buy pre-packed fruit and vegetables'.

At the same time, another respondent from FG4 stated that:

> 'I always compare the prices of pre-packed and loose potatoes. If the price of pre-packs is too low, then I make the assumption that the potatoes are of lower quality.

Pearson (2005) argued that consumers often associate lower prices with a perception that the product is of low quality. Therefore, it is debateable whether a low price alone is a valid approach to attract more buyers to a particular retail outlet. However, local seasonal fruits like durians, mangosteen and rambutans, as well as imported produce such as potatoes from the US or apples from Australia, were found to be more expensive at supermarkets and hypermarkets.

There were also some participants who thought that the fresh produce available from traditional markets was cheaper. This very much depended on which of the traditional markets shoppers most frequently visited. For instance, a participant from FG3 indicated that fresh fruit and vegetables from farmers markets are more expensive compared to other traditional markets. Another participant from the same group discussion agreed and mentioned that fresh produce sold at wholesale markets was much cheaper than other markets.

6.4.2 Convenience

Another factor which was perceived to influence participants store choice behaviour was convenience. The findings revealed that there were differences in the concept of convenience between the older and younger participants of the focus group discussions. An elderly participant from FG1 commented:

> 'Although the trading hours in traditional markets is not too convenient as it opens from morning till afternoon, location wise it is convenient as the markets are situated near my house'.

Another participant from the same focus group added:

> 'I agree. It is also convenient for me to walk to the mini-market. As I buy fish, I also buy my fruit and vegetables supplies'.

However, those participants who do not reside close to any traditional markets or grocery stores do not find it convenient to shop at these places. One young participant from FG4 commented:

> 'I dislike going to traditional markets. No parking place is provided, which makes it difficult and time consuming to find a parking space'.

Torjusen et al. (2001), Hsu and Chang (2002), McKinna et al. (2007) and Abu and Roslin (2008) found shoppers who look for convenience appreciate facilities that ease their shopping experience such as abundant parking spaces. Childers et al. (2001) noted that consumers choose to shop at retail outlets that offered lower

parking fees, a better assortment, more national brands, less travelling time and shorter check-out lines.

It is crucial for modern retail outlets to provide a good shopping experience. According to Levenburg (2005), many consumers are left unsatisfied as a result of poor customer service, long check-out queues, impolite tellers, ignorant staff and the non availability of advertised goods (Gagliano and Hathcote 1994). Similarly, the findings of this study found that elderly participants complained that:

> 'It is difficult to find assistance when doing grocery shopping at a supermarket. The services provided by vendors in most traditional markets and grocery stores are better'.

Conversely, the ability to provide specialised advice to their customers is an advantage for the traditional markets (Levy and Weitz 2001). The better service offered by knowledgeable vendors attracts customers to shop from the traditional market. Consumers prefer to buy from vendors who are able to provide them with information on the desired product (Trappey and Lai 1997).

6.4.3 Variety

Variety was another factor which influenced participants' choice of retail outlet. However, variety depends on what shoppers are looking for. One respondent from FG3 stated that:

> 'You can find a variety of traditional salads or *ulam* such as *petai, ulam raja* and *jering* at most traditional markets'.

At the same time, a greater variety of imported fresh produce was available from most modern retail outlets:

> 'There is a wide selection of fresh fruit and vegetables at supermarkets and hypermarkets. I purchase imported produce such as potatoes, pears, grapes, as well as organic produce at these outlets'.

Another participant added:

> ‘I like to shop at modern retail outlets because they have a lot of sections: wet and dry’.

Modern retail outlets are fast gaining popularity in Malaysia, attracting consumers with their ‘one-stop’ and ‘all-under-one-roof’ concepts. The ‘one-stop’ shop is a major strength for new retail formats (Hansen 2003). Supermarket shoppers are attracted by product variety and feelings of satisfaction (Trappey and Lai 1997).

According to Clark (2008), the concept of ‘one-stop’ shopping includes combining shopping for food and carrying out other activities like banking. For instance, many modern retail outlets in Malaysia combine a large supermarket or hypermarket with several other shops which offer services such as banking, food, clothing and entertainment, all under the same roof.

However, the disadvantage of offering more variety is the associated cost of carrying a greater assortment of each product category (Hansen 2003). According to Goldman et al. (1999), supermarkets initially focused on packaged and processed food lines. In the 1980s, supermarkets decided to emphasise fresh food lines, but offered only a limited range.

6.4.4 Freshness

Freshness is a factor which attracts consumers to shop from both modern and traditional retail outlets. According to Toivonen and Brummell (2008), appearance and the texture of fresh fruit and vegetables are the two main attributes that are most often associated with quality. By looking at both quality attributes, consumers can then decide which fruit and vegetables to buy and where to buy them from. However, appearance by itself may be a misleading attribute to determine the freshness of fruit due to the application of wax. Therefore, texture is the crucial quality attribute in determining the freshness of fruit and vegetables. However, unless the store offers samples to consumers, texture can only be evaluated post-purchase at the time of consumption.

Modern retail outlets have the advantage of offering fresh fruit and vegetables in refrigerated display units. Furthermore, supermarkets and hypermarkets have the advantage of good retail procurement logistics, technology and inventory management (Reardon et al. 2003).

As for the traditional market, goods are fresh during the early hours of business, but in a tropical climate like Malaysia, fruit and vegetables will quickly wither when being displayed in an open space without refrigeration. Pérez-Lizaur et al. (2008) indicate that freshness is among the most essential quality attributes consumers use when shopping for fresh fruit and vegetables. Primary food shoppers in Hong Kong viewed vegetables in traditional markets as "more fresh" (Goldman et al. 1999). They emphasised the freshness of vegetables in traditional markets, given that vegetables were delivered directly from wholesale markets and the fact that vendors constantly trimmed, sprayed, cleaned and sorted. In contrast to the modern retail outlets, even although they have refrigeration, shoppers in Hong Kong interpreted the lack of storage space and refrigeration as being positive, for fresh fruit and vegetables had to be cleared daily, which further enhanced their freshness.

6.4.5 Sales promotions

Modern retail outlets have the ability to attract more customers through sales promotions due to their large marketing budgets. However, Trappey and Lai (1997) argue that sales promotions do not have a negative impact on the traditional market. Although traditional markets might loose younger shoppers who are attracted by sales promotions in modern retail outlets, older consumers are loyal to the traditional markets as they infrequently leave their neighbourhood to shop. Studies by Trappey and Lai (1997) have shown that supermarket shoppers are less loyal than wet market shoppers. While some 96.0% of supermarket shoppers in Taiwan visit other supermarkets, only 71.0% of those buying from the traditional markets visit other wet markets.

A number of young shoppers from FG2 mentioned that they shop from modern retail outlets to get shopping points. For example, Tesco has introduced Clubcard. Customers who shop at Tesco receive points whenever they shop at Tesco. These

points may be converted into money-off Clubcard vouchers for customers to enjoy on their next shopping visit.

Besides promoting other household products, fruit and vegetables are also being advertised electronically and via the mass media. Several hypermarkets and supermarkets such as Carrefour, Tesco and Giant often advertise fresh fruit and vegetables on television, in newspapers and catalogues. Consumers are attracted by these sales promotions for they can save a considerable amount of money.

In-store tasting is another example of sales promotion. It is an approach to provide more product information to consumers before buying the product (Chang and Burke 2007). Both modern retail outlets and traditional markets offer this service to consumers.

6.4.6 Good environment

The store environment was again mentioned as another factor which may influence consumer's choice of retail store. One participant commented on the condition of a modern retail outlet:

> 'Although supermarkets and hypermarkets have their own wet sections where the layout is set up similar to the traditional markets, this section is always clean. I feel comfortable when I do my grocery shopping here'.

Another participant agreed and mentioned:

> 'Modern retail outlets are clean and air-conditioned. It helps make the shopping experience comfortable and pleasant'.

The condition of most traditional markets is the opposite of what shoppers experience when visiting supermarkets and hypermarkets. A young participant from FG4 commented:

> 'Traditional markets are dirty. The place is over-crowded with people, which makes it difficult to select products that you want to buy'.

Another participant added:

> 'Traditional markets are not a place to bring your children along, especially babies and toddlers. The place is hot and smelly'.

Despite portraying traditional markets as having a poor environment, the traditional markets continue to offer goods and services which attract loyal customers. Trappey and Lai (1997) indicate that the poor environment had less impact on shoppers coming to traditional markets. The traditional markets offered a more convenient location, a greater variety of products and superior product quality, which far outweighed the inferior shopping atmosphere (Trappey and Lai 1997; Goldman et al. 1999; Hsu and Chang 2002). The strong bond between vendors and their customers also explains why consumers continue to shop at traditional markets.

6.5 Review and implications

The results of the preliminary study provide a basis for identifying the factors that most influence consumers in their choice of retail store when purchasing fresh/chilled meat and fresh fruit and vegetables. Even though modern retail outlets are expanding, purchasing both types of fresh food from traditional markets is still the preferred place of purchase in Malaysia.

Similar criteria (freshness, competitive price, convenience and variety) were identified by consumers who preferred to purchase their fresh/chilled meat and fresh fruit and vegetables from traditional markets (Table 6.4).

Additional criteria such as having a good relationship with retailers, the meat is of good quality and Halal guaranteed enables traditional markets to emerge as being the preferred place of purchase for fresh/chilled meat.

Table 6.4: Factors attracting consumers to purchase fresh food supplies from modern retail outlets and traditional markets

Factors attracting consumers	Fresh/chilled meat		Fresh fruit and vegetables	
	Modern retail outlets	Traditional markets	Modern retail outlets	Traditional markets
Freshness	√	√	√	√
Halal guaranteed		√		
Good relationship with retailers		√		
Good quality		√		
Competitive price	√	√	√	√
Convenience	√	√	√	√
Varieties	√	√	√	√
Good environment	√		√	
Sales promotions			√	

The findings of this research suggest that older consumers are more likely to continue to buy from the traditional markets. These findings are not dissimilar to Trappey and Lai (1997) and Zinkhan et al. (1999). Older shoppers appreciate more the relationship built between themselves and their preferred vendor. Even although traditional markets provide a less pleasant environment, in this environment, interpersonal relationships thrive and the community is brought closer together. Shoppers visit traditional markets not only to buy goods, but also to meet friends and acquaintances. Even so, Hsu and Chang (2002) indicate that grocery shoppers who purchase fresh meat from supermarkets tend to keep shopping from the same location.

On the other hand, supermarkets and hypermarkets have the advantage of offering a pleasant environment in which to shop and good sales promotions for their patrons. Beside food safety, the supermarkets are attracting more shoppers on the basis of convenience and a good atmosphere (Gorton et al. 2009). For traditional retailers, it may be difficult for them to be competitive in providing such pleasant surroundings for their consumers. According to Ho (1999), by Western standards, wet markets will always hold the image of being overcrowded, noisy, dirty and unhygienic. Conversely, Trappey and Lai (1997) reveal how supermarkets in Taiwan adapt store layouts which resemble traditional markets in order to encourage social interactions between their staff and customers, as well as attracting more elderly customers.

In terms of sales promotions, supermarkets were described as being extremely active in reaching as many shoppers as possible, while traditional retailers were generally passive. According to Lui (2008), shoppers were bombarded by supermarket advertisements everyday through the print media or electronically. Although there is no urgency to purchase, gullible shoppers may be motivated to purchase when learning about the discounted price of certain products.

The findings of this study indicate that younger shoppers occasionally purchase their fresh fruit and vegetables from supermarkets and hypermarkets to get shopping points or were attracted by the in-store tastings. When it comes to meat, some modern retail outlets have taken the time to conduct some in-store tastings by conducting cooking demonstrations. However, neither of these approaches will attract the Muslim shoppers. Bonne and Verbeke (2006) confirm that Muslim consumers who hold strong religious beliefs are most concerned about the Halal status of meat products. Muslims who have any doubts about the Halal status are unlikely to purchase and consume these products (Zakaria 2008). Ahmed (2008) explored several issues relating to the marketing of Halal meat in supermarkets in the UK. These findings have a few implications for modern retailers to; advertise in Islamic newspapers, supply other complementary Halal products, and the ability for shoppers to easily access sales people who are able to provide advice on particular Halal products.

Urbanisation and the increase in personal disposable income has influenced shoppers, especially the younger shoppers (Hsu and Chang 2002). Younger shoppers value more the convenience factor that supermarkets and hypermarkets have to offer. According to Hsu and Chang (2002), there is a tendency for grocery shoppers to change their shopping habits and to shift to modern retail outlets for meat products due to food safety issues. This is an advantage for modern retailers as perishable products are being displayed and stored in chilled and refrigerated cabinets. As fresh meat sold in modern retail outlets remains fresh for longer, supermarkets and hypermarkets have the advantage of offering a more competitive price on a greater variety of products.

7. Main research methodology

7.1 Chapter Outline

This chapter begins with the research design, followed by a description of the sampling process. A quantitative questionnaire is designed from an extensive review of the literature on store choice, food quality, consumers' attitudes and preferences with regard to their decision to purchase fresh/chilled meat or fresh fruit and vegetables. The translation process for both questionnaires is described, followed by the data collection process and statistical techniques used to analyse the data. The chapter concludes with a brief summary of the impediments encountered by the researcher in obtaining the data required.

7.2 Research design: quantitative research method

According to Malhotra et al. (2008), to address a new marketing research problem, quantitative research should be preceded by qualitative research. Subsequent to an initial exploratory investigation, a structured quantitative research design was initiated to achieve the desired research objectives. Creswell (1994, p. 2) defined quantitative research as a study based on testing theory composed variables, measured with numbers, and analysed with statistical procedures, in order to determine whether the predictive generalisations of the theory hold true.

This study will use the survey method, which requires the development of a structured questionnaire given to a sample of a population which is designed to elicit specific information from respondents (Malhotra et al. 2008). Tull and Hawkins (1990) confirm that the survey method can provide data on attitudes, feelings, beliefs, past and intended behaviours, knowledge and personal characteristics, which, in the main, comprise the research objectives of this study. Furthermore, the survey method is the most common method of primary data collection in marketing research. It is simple to administer and can provide reliable data where responses are limited to the stated alternatives (Malhotra et al. 2008).

A survey can be administered in a number of ways; (1) personal interviews, (2) telephone interviews, (3) mail interviews and (4) electronically through either email or the internet. Since the survey instrument was quite large and involved 20 to 30 minutes of the respondents' time to complete, the researcher considered personal face-to-face interviews to be the most appropriate means of data collection. As the research design utilised a Likert scale, Coelho and Esteves (2007) were able to demonstrate that respondents interviewed over the telephone often had difficulty discriminating between answers using more than a five point scale. Furthermore, Zulkefly and Baharudin (2009) revealed that Malaysians are increasingly using mobile phones rather than a fixed line telephones. In the absence of a mobile telephone directory, some difficulties were anticipated in the administration of the survey by telephone interview: (1) difficulties in identifying whether the mobile was used for business or personal purposes; (2) subjects might often be in an environment (meeting, working, driving, walking) which would make it difficult to spend time on the telephone; and (3) not everyone can afford to own a mobile phone. Zulawski and Wicklander (2002) mentioned that through telephone interviews, the interviewer cannot control the interview, given that the interviewer cannot determine whether the subject is paying attention to the conversation as communication is only limited to the verbal channel. Additionally, Fink et al. (2003) demonstrate without some prior knowledge of the respondents, interviews may be conducted with persons living outside the sampling area.

Mail interviews was not considered as an option due to the non-availability of a complete mailing list, the time involved (distributing and waiting for respondents to return the survey), the low response rate and the cost involved. Gregg (2002) and Malhotra et al. (2008) agree that mail can be highly effective if the researcher is able to procure a current mailing list compiled from telephone directories or some association or membership that is close related to the population of interest. However, the biggest disadvantage of this method is the low response rate compared to telephone interviews and face-to-face interviews. As mentioned by Gregg (2002), a response rate of 50.0% is not unusual for a mail survey. Ray (2008) agrees that the typical mail survey has a return rate of below 50.0%. A researcher who decides to undertake a mail survey for a research study should be aware that response levels to this particular type of survey are quite low – around 20 to 25.0%

(Szwarc 2005). Wimmer and Dominick (2005) mentioned that the response rates for mail surveys range from 1 to 4.0%.

According to Rich (2009), utilising the internet through email is not an effective method for interviewing people. This is because subjects have some time to think about their responses. Furthermore, the researcher is seldom able to gather descriptive details or to observe subjects' body language or reactions towards the survey. Additionally, Bakar and Crump (2005) report that a digital divide exists in Malaysia where not everyone is computer literate, owns a computer or can afford to subscribe to the internet. Upon weighing the advantages and disadvantages of the alternative methods of data collection, the researcher decided that personal face-to-face interviews were the most appropriate means.

Personal interviews may be categorised as in-home, central location or computer assisted (Malhotra et al. 2008). In this study, the central location personal interview method, based on selected shopping malls and traditional markets, was considered to provide the most appropriate means of data collection. Over recent years, the number of market researchers using the shopping-mall intercept method as the primary means of data collection has increased tremendously, due to the fact that it is becoming more difficult and more costly to use door-to-door interviews (Bush and Hair 1985). According to Hair (2008), the shopping mall intercept method is less expensive and more convenient because the researcher does not need to spend much time or effort in securing a person's willingness to participate in the interview because both are already at a common location. Potential respondents are intercepted and interviewed as they arrive or as they are about to leave the shopping precinct.

In both surveys, the majority of questions were pre-coded. However, bias can be potentially created where the researcher fails to provide other possible answers or to provide an opportunity for respondents to answer differently. The pre-coded response options are designed to force respondents to make choices that may not be entirely correct. In this study, respondents were forced to choose the level of agreement or disagreement with the statements given. However, Dornyei (2003) indicated that these types of questions are ideally suited for quantitative and

statistical analyses as the response options can be easily coded and entered into a computer database. At several points in time, respondents were also given the opportunity to express their general attitudes and opinions. For this reason, a qualitative element was found to be desirable to support, to explain or to verify the findings obtained from the quantitative data.

7.3 Sampling design process

A research design consists of either a census or a sample. A census involves a complete enumeration of the elements of a population (Malhotra et al. 2008). As mentioned by Kolb (2008), it is possible for a researcher to conduct a census given that the number of people from whom information is needed is small, especially where the members of the population can be easily reached. However, a researcher may encounter problems with a census when some people refuse to participate or some people are not reachable. Boyce and Boyce (2004) mentioned that it is better to conduct a census when the research findings may be seriously distorted if some elements of the population are not included. However, Malhotra et al. (2008) suggested that the use of a census was unrealistic if the population involved in the research was large. Other limitations such as money and time constraints may also force the researcher to consider the use of sampling.

A sample is a subgroup of the population which is selected to participate in the study (Malhotra et al. 2008). A sample statistic is an estimation of a population parameter (Boyce and Boyce 2004) and thus statistics are used to make inferences about the population parameters. In this study, the use of a sample was considered because: (1) the research was undertaken on a tight budget with limited resources. Given the time allocated and approved by the researcher's sponsor, data collection had to be completed in no more than three months; and (2) given that the population elements were widely scattered across the Klang Valley region, face-to-face interviews could be readily carried out within a variety of shopping malls and traditional retail markets.

7.3.1 Defining the target population

Malhotra et al. (2008, p.470) define the target population as the collection of elements or objects that possess the information sought by the researcher and about which inferences are to be made. Wrenn et al. (2002) suggested that, in order to define the population of interest, it should be related back to the research objectives. Ideally, the target population should be defined in terms of:

(1) elements. This is the object from which the information is obtained. Generally, the element in a survey is the respondent. Ideally, respondents should be responsible for some if not all of the decisions to purchase fresh/chilled meat or fresh fruit and vegetables either for themselves or their household to be eligible to participate in this study. No limits were imposed on age, gender, ethnicity, religion or education levels. Persons who were not responsible for the purchase of fresh food products were excluded from the survey.

(2) sampling units. The sampling unit for this study was the household as represented by the person who made the decision to buy fresh/chilled meat or fresh fruit and vegetables for consumption by their immediate family members. The respondent who agreed to participate in this study was not necessarily the head of the household. In most cases, the head of the household was the husband who provides the money to meet the household's expenses, yet the decision to purchase food products was most often made by a female.

(3) extent. This refers to any geographic boundaries. In this study, the Klang Valley was chosen as the research area for a number of reasons: (a) geographically, the Klang Valley lies between Selangor state and the Federal Territory which includes large cities like Kuala Lumpur (the national capital of Malaysia), Putrajaya, Shah Alam and Klang; (b) the availability of both modern retail outlets and traditional markets; and (c) it is a region which holds a good mixture of potential respondents with different levels of education, income distribution and ethnicity, which are anticipated to have some impact on the purchase and consumption of both fresh/chilled meat and fresh fruit and vegetables.

(4) product class. The survey will focus only on the purchase of fresh/chilled meat and fresh fruit and vegetables from a retail store.

7.3.2 Determining the sampling frame

A sampling frame consists of a list or set of directions for identifying the target sample (Malhotra et al. 2008). The sampling frame for this study was set as follows:

(1) the researcher, with the help of two research assistants were stationed at either a modern retail outlet or traditional wet market for a period of one week from 10 am to 8 pm daily. Within this time frame, the researcher hoped to capture those working and non-working respondents who were responsible for the purchase of fresh/chilled meat and/or fresh fruit and vegetables for their household.

(2) a few screening questions were used to pre-qualify respondents:

   (a) nationality and place of residence. Expatriates who were residing in the Klang Valley were excluded from the survey. The motive to exclude expatriates was to meet the objective of the research which was to understand the perceptions and experiences of Malaysian consumers in the Klang Valley when purchasing fresh food from a retail store. Individuals who were not residing within the Klang Valley region such as those who just happened to be at the research location during that period, but were from states other than Selangor and the Federal Territory were excluded from the survey in order to conform to the geographic boundaries of the study. A decision was also made to exclude domestic helpers who take care of the children, cook and clean the house. Khalid (2009) estimates that around 300,000 Indonesians work as domestic helpers in Malaysia. Although the number of domestic helpers is large, these individuals are best excluded from the survey because they do not represent the Malaysian population as a whole.

   (b) respondents' had to be personally involved in the decision to purchase either fresh/chilled meat or fresh fruit and vegetables for their household. Individuals who purchased fresh food items from food services such as restaurants and hawker stalls were excluded from this survey.

   (c) each respondent was asked in advance to allocate 20 minutes of their time to complete the survey. A 20 minute time frame, which was pre-tested, was found to give sufficient time for the respondent to complete the survey. If more time was spent, the chance of gathering incomplete survey responses was anticipated to increase.

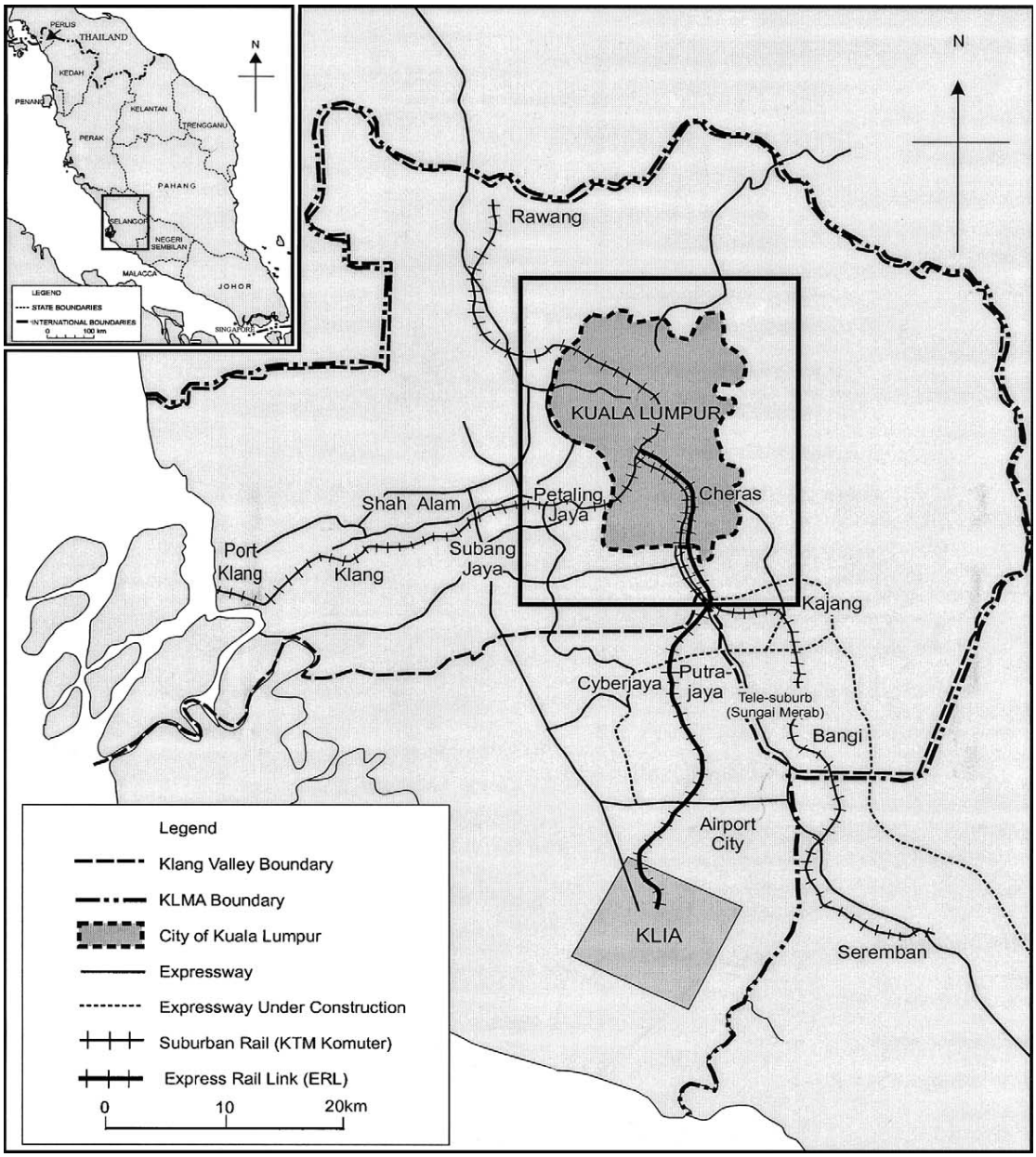
7.3.3 Select a sampling technique

The researcher needed to decide whether to utilise a probability or non-probability sampling technique. Probability sampling refers to selection procedures in which elements are randomly selected from the sampling frame and each element has a known change of being selected (Reis and Judd 2000). Conversely, the selection of the sample elements in non-probability sampling is not by chance because the selection relies upon the personal judgement of the researcher (Malhotra et al. 2008). The sampling technique used to select respondents in this study was based on probability sampling. This choice was made based on a number of considerations. As mentioned by Kumar (2008), when extensive geographic areas need to be covered with minimum travelling costs, multi-stage area sampling is most appropriate. By referring to the sampling frame, constraints and limitations, the researcher decided to select the respondents using a three-stage area sample.

The first stage involved a cluster sampling technique, which related to the area of the study: the Klang Valley region. Aiken and Leigh (1975) mentioned that the Klang Valley region includes Rawang, which is in the northern part of the state of Selangor, and Kajang, which is in the southern part of Selangor. In a more recent study, Bunnell et al. (2002) mentioned that the Klang Valley region has been extending southwards in conjunction with the development of the Kuala Lumpur International Airport (KLIA) around Sepang, which is about 60 km from Kuala Lumpur (Figure 7.1).

Seven principal cities were selected randomly for this survey: Kuala Lumpur, Shah Alam, Petaling Jaya, Ampang, Kajang, Putrajaya and Puchong.

Figure 7.1: Map of the Klang Valley region.



Source: Adapted from Bunnell et al. (2002).

In the second stage, the researcher made a list of modern retail outlets and traditional markets available in the cities that had been selected. The list of supermarkets, hypermarkets and grocery stores/mini-markets were drawn from the Malaysia Yellow Pages, while the list of traditional markets operating in the Klang Valley were obtained from the website of the Federal Agricultural Marketing Authority (FAMA). In order to select the retail outlets for this study, the researcher had to consider two factors: (1) the time allocated for data collection (12 weeks); and (2) the period for the researcher and two research assistants to be stationed at a

retail outlet (10 am to 8 pm for a period of one week). Subsequently, the researcher decided to spend six weeks at six selected modern retail outlets and another six weeks at six selected traditional retail outlets. These retail outlets were selected randomly.

The third step involved the selection of the respondents. The researcher and two research assistants were stationed at different entrances of the retail outlet. This was to ensure that most of the shoppers which visited the retail outlet at that particular time had some chance of being selected to participate in this study. To ensure randomness, shoppers passing by the station were counted and every 7^{th} person was intercepted. According to Malhotra et al. (2008), picking every n^{th} element is known as systematic sampling, where each population element has a known and equal probability of selection. Furthermore, selecting respondents through systematic sampling could avoid the respondents being selected based on the personal judgement of the researcher. The data collection process was conducted at the same period of time everyday at each retail outlet in order to standardise the results and to reduce sampling error. Nevertheless, the researcher was aware that some people who may be working on night shift could be excluded from the study.

7.3.4 Determining the sample size

A number of factors were considered in determining the sample size for this study:

(1) statistical requirement. Depending on the type of statistical analysis to be performed, an appropriate sample size was required to facilitate the analyses. For example, there are two general recommendations in determining the minimum sample size for factor analysis, which are the absolute number of cases (*N*) and the subject-to-variable ratio. Comrey and Lee (1992) [cited in Field 2009] came up with the Rule of 500, which classified 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 or more as excellent. Hair et al. (1998) recommended that the number of participants should be in the ratio of 20:1 in relation to the number of variables. As recommended by Field (2009), a sample of 300 or more will probably provide a stable factor solution. However, Field (2009) added that it was important to ensure that enough variables are included in the research to adequately measure all of the factors.

(2) data collection process. Since the personal interviewing of potential respondents was undertaken by the researcher with the help of only two research assistants, with a limited budget and time constraints, a large sample size was impractical.

Having considered these factors, the researcher determined that a sample of between 500 to 600 respondents would be appropriate, with 250 to 300 respondents for each survey. To ensure good representation and to minimise sampling error, respondents who participated in both surveys were different individuals. In other words, respondents were not allowed to answer both surveys but were required to answer either the fresh/chilled meat survey or the fresh fruit and vegetables survey. Subsequently, this allows the results of the two studies to be compared.

7.4 Questionnaire design

The survey instrument for this research consisted of two questionnaires which discussed consumer's perceptions and experiences of food quality in purchasing fresh/chilled meat (Appendix 3) and fresh fruit and vegetables (Appendix 4). The questionnaires were designed using a combination of both closed and open-ended questions. For the structured questions, a variety of alternative measures were utilised including multiple-choice, dichotomous and scale questions.

With regard to the use of scales, there was considerable discussion about the appropriate use of either an odd or even-numbered scale. Coelho and Esteves (2007) argued that an even-numbered scale is the preferred choice of response alternatives in research associated with consumer attitudes and preferences. Respondents were perceived to have at least a slightly positive or slightly negative response rather than a neutral response. Si and Cullen (1998) confirmed that different cultural groups respond in a different way to surveys using explicit midpoint responses. With an odd-numbered scale, Coelho and Esteves (2007) demonstrated that the middle-point was often used by respondents who preferred to reduce the response effort, which not unexpectedly, impacted adversely on the quality of the data. Mitchell (1999) revealed that Asian respondents preferred to use the middle of the scale when responding to surveys. Bishop (1987) suggested that in

order to prevent respondents from choosing the middle-point, an even numbered scale should be employed. In light of the literature review, it was determined that a six-point scale was the most appropriate for this survey.

Open-ended questions or unstructured questions were also included in the survey. Here, respondents were allowed to freely convey their views with regards to the topic of interest. Unstructured questions assist the researcher in obtaining a greater understanding of the topic, while also ensuring that no major variables were excluded for the fixed response question sets.

Both questionnaires were divided into four sections (Table 7.1). The first page of each survey had an introductory page which described the purpose of the study, the requirements for respondent eligibility and a brief explanation of the gift (a green bag). Related questions were arranged and grouped together in separate sections to facilitate a better flow. Past researchers have recommended that the questionnaire should begin with simple questions which reflect the theme of the research (Lehman 1985; Batt 2003; Mokhlis 2006; Malhotra et al. 2008).

Table 7.1: Structure of questionnaires

Fresh/chilled meat questionnaire		**Fresh fruit and vegetables questionnaire**	
Section 1	Store choice behaviour and quality	Section 1	Store choice behaviour and quality
Section 2a	The purchase of fresh/chilled chicken	Section 2a	The purchase of fresh potatoes
2b	The purchase of fresh/chilled beef	2b	The purchase of fresh spinach
		2c	The purchase of fresh apples
Section 3	Dissatisfaction and food safety issues	Section 3	Dissatisfaction and food safety issues
Section 4	Socio-demographic factors	Section 4	Socio-demographic factors

Both questionnaires discussed similar themes under the same section; Section One, Three and Four. The main difference between each of the questionnaires was found in Section Two, which examined the purchase of different types of food products.

Section 1: Store choice behaviour and quality

For both surveys, Section One sought to gather information regarding the store choice behaviour of the respondents and their perceptions of the quality of the respective commodity (fresh/chilled meat or fresh produce).

Question One sought to identify the preferred place to purchase fresh/chilled meat or fresh fruit and vegetables.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
From where do you buy MOST of the fresh/chilled meat that you consume in your household? (Becker 2000, Becker et al. 2000, Glitsch 2000, Hsu and Chang 2002, Bernues et al. 2003, Bonne and Verbeke 2006, Krystallis and Arvanitoyannis 2006, Liu et al. 2006)	From where do you buy MOST of the fresh fruit and vegetables that you consume in your household? (Zinkhan et al. 1999, Pollard et al. 2002, Reardon and Berdegue 2002, Ragaert et al. 2004, McKinna et al. 2007)
[Multiple responses: Supermarket; Hypermarket; Wet market/Fresh market; Farmers market; Night market; Wholesale market; Grocery store/Mini market] (Categories were based on Zain and Rejab 1989, Malaysia 2006 and results of preliminary research)	

As both fresh meat and fresh produce are perishable items, it was necessary to gather information on the frequency of purchase. Whereas consumers often purchase non-perishable items in bulk and store the products for a long period of time for future consumption, perishable foods are generally purchased in smaller quantities on a more frequent basis (Zinkhan et al. 1999). Shepherd (2005) suggested how the greater ownership of cars and refrigerators in Asia was influencing the place, regularity and the quantity of fresh food purchased at any one time. Shamsudin and Selamat (2005) reported that nearly 90.0% of the households in Malaysia have refrigerators.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
How often do you purchase fresh/chilled meat from this retail outlet? (Becker et al. 2000, Goldman and Hino 2005, Krystallis and Arvanitoyannis 2006)	How often do you purchase fresh fruit and vegetables from this retail outlet? (Zikhan et al. 1999, Becker et al. 2000, Tam 2006, McKinna et al. 2007, Yoo et al. 2006)
[Multiple responses: Daily; 2-3 times per week; Once a week; Once every 2 weeks; Once a month; Others (please specify)] (Categories were based on results of preliminary research)	

Several factors such as the availability, price and promotional campaigns, time constraints, impulsive buying and convenience may influence cross-shopping behaviour among consumers (Skallerud et al. 2009). Most modern retail outlets are known for offering large assortments of food and non-food items. However, consumers may also go to other stores which offer high quality products. Results from the preliminary research demonstrated that consumers cross-shopped when purchasing imported beef or minced meat which were not available from any of the traditional markets. Similarly, consumers purchased most imported fruit and vegetables from the supermarkets or hypermarkets, but purchased local fruit from the traditional market. Consumers who were searching for convenience and value-added products may choose to visit modern retail outlets as these stores offer semi-prepared vegetables that are washed, trimmed, cut and ready to cook instantly (Brookes 1995). The desire to purchase ready-to-eat and ready-to-cook fresh fruit and vegetables is emerging among Malaysian consumers.

Fresh/chilled meat questionnaire	**Fresh fruit and vegetables questionnaire**
What proportion of the total amount of the fresh/chilled meat that you buy is purchased from this retail outlet? From where else do you purchase fresh/chilled meat? Please tick all of those retail outlets from which you purchase fresh/chilled meat and indicate the proportion of the fresh/chilled meat that you buy. (Hsu and Chang 2002, preliminary research)	What proportion of the total amount of the fresh fruit and vegetables that you buy is purchased from this retail outlet? From where else do you purchase fresh fruit and vegetables? Please tick all of those retail outlets from which you purchase fresh fruit and vegetables and indicate the proportion of the fresh fruit and vegetables that you buy. (Brookes 1995, Yoo et al. 2006, preliminary research)
[Multiple responses: Supermarket; Hypermarket; Wet market/fresh market; Farmers market; Night market; Wholesale market; Grocery store/mini-market] (Categories were based on results of preliminary research)	

The next set of questions were designed to relate the preferred place of purchase with the quality cues that consumers utilised when purchasing fresh food. Steenkamp (1997) defined quality cues as information stimuli which are used to evaluate the performance of the product according to consumer demands. Quality cues included intrinsic variables (colour, shape, appearance and others) and extrinsic variables (store choice, brand, origin, packaging and other product

attributes). Consumers who have little expertise rely almost exclusively on extrinsic cues for quality selection (Becker et al. 2000). Moreover, past research has demonstrated that the place of purchase has a significant influence in communicating product quality and safety (Bernues et al. 2003; McEachern and Seaman 2005). Consumers often trust knowledgeable vendors in determining the quality of their fresh products (Glitsch 2000). Grunert (1997) demonstrated a correlation between the place of purchase and consumers' quality perception of meat in countries such as France, Germany, Spain and the UK. Zikhan et al. (1999) highlighted the importance of investigating why consumers purchased fresh fruit and vegetables from traditional markets compared to other retail stores.

Results from the preliminary research identified two alternative groups of retail store from which respondents purchased fresh food: (1) the modern retail outlets (supermarket and hypermarket) and (2) the traditional markets (wet market/fresh market, farmers market, night market, wholesale market, grocery store/mini market).

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
In making your decision to purchase fresh/chilled meat from your preferred retail outlet, what are the major criteria that influence your choice? (Grunet 1997, Hoffmann 2000, and Hsu and Chang 2002)	In making your decision to purchase fresh fruit and vegetables from your preferred retail outlet, what are the major criteria that influence your choice? (Zikhan et al. 1999)

When predicting the quality of product, consumers utilise only some quality cues. Engel et al. (1986) concluded that consumers generally utilised only three or four quality indicators when evaluating products. Thus, the quality cues perceived to be relevant and important were ranked accordingly (Hoffmann 2000).

However, there may be several other motivational factors that influence why consumers choose to go to a specific retail store as compared to the alternatives.

Respondents were asked to rate 35 criteria which were identified from the literature as being of some influence in the choice of preferred retail outlet, on a scale from 1 to 6, where 1 was "not at all important" and 6 was "very important".

Criteria	Sources
Competitive price	Grunert (1995), Zinkhan et al. (1999), Acebron and Dopico (2000), Becker et al. (2000), Hoffmann (2000), Farhangmehr et al. (2001), Flavian et al. (2001), Goldman et al. (2002), Hsu and Chang (2002), Pollard et al. (2002), Bernues et al. (2003), Bredahl (2004), Sinha and Banerjee (2004), Goldman and Hino (2005), McEachern and Seaman (2005), Skallerud et al. 2009.
Clean	Kawahara and Speece (1994), Zinkhan et al. (1999), Lo et al. (2001), Hsu and Chang (2002), Goldman and Hino (2005), Bonne and Verbeke (2006), Abu and Roslin (2008).
Easy parking	Zinkhan et al. (1999), Farhangmehr et al. (2001), Torjusen et al. (2001), Hsu and Chang (2002), Geuens et al. (2003), McKinna et al. (2007), Abu and Roslin (2008).
Everything all under one roof	Zinkhan et al. (1999), Farhangmehr et al. (2001), McEachern and Seaman (2005), Bonne and Verbeke (2006), McKinna et al. (2007), Abu and Roslin (2008).
Freshness	Kawahara and Speece (1994), Steenkamp (1997), Goldman et al. (1999), Zinkhan et al. (1999), Becker et al. (2000), Hsu and Chang (2002), Bernues et al. (2003), Kennedy et al. (2004), Goldman and Hino (2005), McEachern and Seaman (2005), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), McKinna et al. (2007).
Value for money	Pollard et al. (2002), Kennedy et al. (2004), McKinna et al. (2007).
Near my house/work place	Trappey and Lai (1997), Zinkhan et al. (1999), Torjusen et al. (2001), Goldman et al. (2002), Geuens et al. (2003), Sinha and Banerjee (2004), Goldman and Hino (2005), McEachern and Seaman (2005), Tam (2006), McKinna et al. (2007), Yoo et al. (2006).
Shopping points/loyalty programs	Sharp and Sharp (1997), Uncles et al. (2003), Leenheer et al. (2007), Demoulin and Zidda (2008).
Cater for kids	Goldman and Hino (2005), McEachern and Seaman (2005), Bonne and Verbeke (2006).
Trolley and baskets are provided	Zinkhan et al. (1999), Geuens et al. (2003), Pettigrew et al. (2005).
Air-conditioned	Trappey and Lai (1997), Goldman and Hino (2005).
Offer special prices or discounts	Trappey and Lai (1997), Zinkhan et al. (1999).
Well organized/well laid out	Zinkhan et al. (1999), Torjusen et al (2001), Tang et al. (2001).
A lot of sections (wet and dry sections)	Hsu and Chang (2002), Baltas and Papastathopoulou (2003), Goldman and Hino (2005).
I can self select	Zinkhan et al. (1999), Goldman and Hino (2005), McEachern and Seaman (2005).
Good customer service/friendly staff	Trappey and Lai (1997), Zinkhan et al. (1999), Hsu and Chang (2002), Sinha and Banerjee (2004), Ong and Phillips (2007), Abu and Roslin (2008), Bustos-Reyes and Gonzales-Benito (2008), Ong et al. (2008).
Attractive display/presentation	Hsu and Chang (2002), Bernues et al. (2003), Geuens et al. (2003), Kennedy et al. (2004), McEachern and Seaman (2005).

Good quality produce	Steenkamp (1990), Kawahara and Speece (1994), van der Pol and Ryan (1996), Trappey and Lai (1997), Zinkhan et al. (1999), Flavian et al. (2001), Hsu and Chang (2002), McEachern and Schroder (2002), Pollard et al. (2002), Baltas and Papastathopoulou (2003), Bernues et al. (2003), Goldman and Hino (2005), McEachern and Seaman (2005), Singh (2006), Bustos-Reyes and Gonzales-Benito (2008), Ong et al. (2008).
All product is clearly priced	Hoffmann (2000).
Knowledgeable staff	Becker et al. (2000), Torjusen et al. (2001), Bernues et al. (2003), Bustos-Reyes and Gonzales-Benito (2008).
Advertising on radio/tv/newspaper	Zinkhan et al. (1999), Becker et al. (2000), Volle (2001), Pollard et al. (2002), McEachern and Seaman (2005), McKinna et al.(2007), Lui (2008).
Return/refund policy	Park 2007, Kim 2008, Huong n.d.
Trading hours	Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Bonne and Verbeke (2006), Richbell and Kite 2007.
A wide range of fresh produce	Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Goldman and Hino (2005), McKinna et al. (2007).
A wide range of other fresh products	Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Goldman and Hino (2005).
Fresh produce is refrigerated	Hsu and Chang (2002), Pollard et al. (2002), Bernues et al. (2003), Goldman and Hino (2005).
Opportunity to bargain on price	Zinkhan et al. (1999), Maruyama and Trung (2007).
Origin of the product is clearly displayed	Becker et al. (2000), Hoffmann (2000), Bernues et al. (2003), Kennedy et al. (2004), McEachern and Seaman (2005), Krystallis and Arvanitoyannis (2006), McKinna et al. (2007).
Sample the product	Clark (1998), Zinkhan et al. (1999), Richter et al. (2000), Mowat and Collins (2000), Barlow et al. (2004).
Local produce	Hoffmann (2000), Torjusen et al. (2001), Bernues et al. (2003), McEachern and Seaman (2005), McKinna et al. (2007).
Product easily accessible	Adebanjo 2001, Bernues et al. (2003), Pettigrew et al. (2005), Ong and Phillips (2007), Ong et al. (2008).
Credit facilities	Zinkhan et al. (1999), Sinha and Banerjee (2004), Kurtulus and Nasir (2006), Ong and Phillips (2007).
Quick/fast checkout	Zinkhan et al. (1999), Goldman and Hino (2005), Ong and Phillips (2007), Abu and Roslin (2008).
Loyalty/always shop there	Zinkhan et al. (1999), Adebanjo (2001), Burke (2002), Hsu and Chang (2002), Goldman and Hino (2005), Bustos-Reyes and Gonzales-Benito (2008).
Product is clearly labelled	Brookes (1995), Becker et al. (2000), Hoffmann (2000), Hsu and Chang (2002), Bernues et al. (2003), Kennedy et al. (2004), McEachern and Seaman (2005), Krystallis and Arvanitoyannis (2006), McKinna et al. (2007), Ong and Phillips (2007), Ong et al. (2008).

Food quality is a complex issue (Becker et al. 2000). Perceived quality is assessed differently among different consumers. Food quality consists of product characteristics and process characteristics (Hoffmann 2000). Becker et al. (2000)

proposed that not all of these characteristics are important for all consumers. Hoffmann (2000) mentioned that consumers generally use three or four characteristics in judging product quality. As a result, the next question on food quality was presented as an open-ended question, in order to capture how respondents evaluated food quality.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
When you think about the quality of the fresh/chilled meat that you buy, what criteria do you consider? (Becker et al. 2000, Hoffmann 2000)	When you think about the quality of the fresh fruit and vegetables that you buy, what criteria do you consider? (Berdegue et al. 2005, Zenk et al. 2005, McKinna et al. 2007)

The term food quality can be defined in many ways depending on who is performing the evaluation (Moskowitz 1995; Wandel and Bugge 1997). For consumers, food quality is mainly related to taste, freshness, appearance, nutritional value and food safety. However, consumers in different societies are often interested in the impact that food production has on the environment and the ethical aspects of food production. As a result of these additional quality attributes, prices will increase, which may adversely affect the consumers' readiness to pay. The following group of questions were designed to measure the respondents' level of agreement/disagreement with the concept of quality. A six point Likert scale was utilised for this group of questions, where 1 was "I disagree a lot" and 6 was "I agree a lot".

Quality means that the product…	
is fresh	Zeithaml (1988), Wandel and Bugge (1997), Torjusen et al. (2001), Grunert et al. (2004), Rico et al. (2007).
is free from chemical residues	Molnar (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Grunert et al. (2004).
will taste good	Zeithaml (1988), Moskowitz (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Torjusen et al. (2001), Grunert et al. (2004), Grunert (2005), Rico et al. (2007).
is nutritious	Moskowitz (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Torjusen et al. (2001), Grunert et al. (2004), Grunert (2005), Rico et al. (2007).
is safe to eat	Caswell and Mojduszka (1996), Torjusen et al. (2001), Blokhuis et al. (2003), Grunert et al. (2004), Grunert (2005), Burlingame and Pineiro (2007), Rico et al. (2007), Ong et al. (2008).

has been produced in a way that is good for the environment	Caswell and Mojduszka (1996), Wandel and Bugge (1997), Torjusen et al. (2001), Blokhuis et al. (2003), Grunert et al. (2004), Grunert (2005).
was produced in a way that did not endanger the farmers	Caswell (2000), Burlingame and Pineiro (2007).
is free from pests and diseases	Molnar (1995), Torjusen et al. (2001), Bourn and Prescott (2002), Grunert et al. (2004).
is free from dirt and soil	Wandel and Bugge (1997).
is free from antibiotics/growth promotants	Grunert et al. (2004).
looks attractive	Rico et al. (2007).
will have a long shelf life	Molnar (1995), Moskowitz (1995), Bernues et al. (2003), Rico et al. (2007).
is good value for money	Zeithaml (1988), Cardello (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Grunert (2005).
I will not be disappointed when I eat the product	Grunert (2005), Sabbe et al. (2009).
I will be able to use most if not all of the product I have purchased	Zeithaml (1988), Grunert (2005), Campbell et al. (2009).
is attractively packaged	Molnar (1995), Caswell and Mojduszka (1996), Resurreccion (2003), Grunert et al. (2004), Grunert (2005).
will be more expensive	Cardello (1995), Moskowitz (1995), Caswell and Mojduszka (1996), Wandel and Bugge (1997), Zeithaml (1988), Grunert (2005).

Two additional statements for the fresh/chilled meat survey required respondents to indicate what influence Halal certification and animal welfare had on their perceptions of quality.

Quality means that the product is…	
is guaranteed Halal	Riaz and Chaudry (2004), Shafie and Othman (2006), Abu and Roslin (2008), Burlingame and Pineiro (2007), Ahmed (2008), Bonne and Verbeke (2008a), Talib et al. (2008), Wan Omar et al. (2008).
was produced and with due regard for animal welfare	Caswell and Mojduszka (1996), Wandel and Bugge (1997), Hoffmann (2000), Torjusen et al. (2001), McEachern and Schroder (2002), Blokhuis et al. (2003), McCarthy et al. (2003), Grunert et al. (2004), Grunert (2005), McCluskey et al. (2005), Maria (2006).

Since Section One was primarily about store choice and quality, the next group of questions were designed to determine the relationship between food quality and the preferred place of purchase for fresh/chilled meat and fresh fruit and vegetables.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
Do you perceive any differences in the quality of fresh/chilled meat between modern retail outlets and traditional markets? Which of the two retail outlets offer the best quality meat? In what ways is the quality of meat better from this retail outlet? (Grunert 1995, West et al. 2001, Brunso et al. 2002, Krystallis et al. 2007, Ahmed 2008)	Do you perceive any differences in the quality of fresh fruit and vegetables between modern retail outlets and traditional markets? Which of the two retail outlets offer the best quality fresh fruit and vegetables? In what ways is the quality of fresh fruit and vegetables better from this retail outlet? (Berdegue et al. 2005, Zenk et al. 2005, McKinna et al. 2007)

The following group of questions sought to measure the relationship between the respondents' perceptions of food quality and their preferred place to purchase fresh/chilled meat or fresh fruit and vegetables. A six point Likert scale was used, where 1 was "I disagree a lot" and 6 was "I agree a lot".

The quality of the [fresh/chilled meat or fresh fruit and vegetables] available is better in supermarkets.	Zenk et al. (2005).
Supermarkets operate everyday while traditional markets operate only on certain days of the week.	Goldman et al. 1999, Zinkhan et al. (1999), Hsu and Chang (2002), Geuens et al. (2003), Bougoure and Lee (2009).
Consumers can bargain on price in wet markets.	Wang (1999), Maruyama and Trung (2007), preliminary research.
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time.	Farhangmehr et al. 2001, Abu and Roslin (2008), Ahmed (2008).
I often meet my friends when I shop at traditional markets.	Trappey and Lai (1997), Goldman et al. (2002), Ahmed (2008).
Supermarkets offer a wider range of fresh food.	Bougoure and Lee (2009).
At traditional markets, the vendors remember my name.	Trappey and Lai (1997), Ahmed (2008).
I cannot buy the other household items I need if I shop at traditional markets.	Goldman et al. (1999).
I go to supermarkets because of the shopping points I get.	Zinkhan et al. (1999), Hsu and Chang (2002), Goldman and Hino (2005), Bustos-Reyes and Gonzales-Benito (2008).

The children feel comfortable when I shop at supermarkets.	Goldman and Hino (2005), McEachern and Seaman (2005), Bonne and Verbeke (2006), Abu and Roslin (2008).
Traditional markets seldom have a good or clean environment.	Goldman et al. (1999), Bougoure and Lee (2009).
Supermarkets offer better customer service than the traditional markets.	Abu and Roslin (2008), Bougoure and Lee (2009).
I can return easily goods if I'm not satisfied when I buy them from traditional markets.	Huong n.d., preliminary research.
I buy my other household goods from supermarkets but I buy my [fresh/chilled meat or fresh fruit and vegetables] from traditional markets.	Othman (1990), Goldman et al. (1999), Krystallis et al. (2007).
Traditional markets offer better quality of [fresh/chilled meat or fresh fruit and vegetables] at a much cheaper price.	Goldman et al. (1999), Bougoure and Lee (2009), Tam n.d.
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets.	Park (2007), preliminary research.
[Fresh/chilled meat or fresh fruit and vegetables] is displayed better in supermarkets.	Liu et al. (2006), Bougoure and Lee (2009).
[Fresh/chilled meat or fresh fruit and vegetables] are fresher in traditional markets.	Kawahara and Speece (1994), Goldman et al. (1999).
I prefer to buy my [fresh/chilled meat or fresh fruit and vegetables] from the same vendor in the traditional markets.	Farhangmehr et al. (2001), Goldman et al. (2002), Sinha and Banerjee (2004), Ahmed (2008).
Products in the supermarkets are clearly priced.	Hoffmann (2000).
Retailers in the traditional market are more knowledgeable about the products they sell.	Goldman et al. (2002), Sinha and Banerjee (2004), Bustos-Reyes and Gonzales-Benito (2008), Bougoure and Lee (2009).

Section 2a and 2b: Fresh/chilled meat questionnaire

Section Two of the fresh/chilled meat survey was organised to investigate consumers purchasing behaviour for fresh/chilled chicken (2a) and/or the purchase of fresh/chilled beef (2b). If respondents did not purchase and consume chicken, they were given the option to proceed to the next sub-section on beef. Any respondents who did not purchase and consume either fresh/chilled chicken or beef was excluded from the analysis.

Respondents were required to respond to a total of nine questions in each sub-section. The first question sought to investigate the frequency with which

Malaysians purchased fresh/chilled chicken and beef. McCarthy and O'Reilly (1999) revealed that consumers quality expectations were influenced by experience and experience in turn influenced future expectations. The strength of this relationship was dependent on the frequency of purchase. West et al. (2001) demonstrated that the frequency of purchasing a particular type of fresh/chilled meat did influence the consumers' perceptions of meat quality.

Thinking specifically about [type of fresh/chilled meat], how often do you purchase them? (McCarthy and O'Reilly 1999, Glitsch 2000, West et al. 2001, Verbeke and Vackier 2004, McCluskey et al. 2005, Norimah et al. 2008, Sepulveda et al. 2008, Brunton 2009)
[Multiple responses: Daily; 2-3 times per week; Once a week; Once every 2 weeks; Once a month; Others (please specify)] (Categories were based on results of preliminary research)

The next question required the respondents to state their preferences for which proportion or part of the fresh/chilled meat they purchased.

In what form do you most often buy [type of fresh/chilled meat]? Please indicate the proportion (%) for EACH form that you buy. (Egan et al. 2001, Hsu and Chang 2002, Kennedy et al. 2004, Krystallis and Arvanitoyannis 2006, Brunton 2009)
[Multiple responses for chicken: whole dressed chicken, chicken portions, chicken drumsticks, fillets skin on, fillets skin off, chicken wings, chicken feet, chicken liver, chicken ribs/keel, chicken center, chicken minced, chicken bishop, chicken cubes, chicken breast, chicken thigh, chicken gizzard] [Multiple responses for beef: beef cube, beef strip, beef chuck tender, beef eye round, soup meat, beef minced, beef bone (soup), beef cutlet, beef t-bone, beef fillet, beef topside, beef tenderloin, ox tail] (Categories were based on the results of the preliminary research and the researcher's observation on the variety of parts of fresh/chilled meat available in both retail outlets)

Respondents were then asked to indicate the method most often used to cook the fresh/chilled meat.

How do you cook [type of fresh/chilled meat] in your household? (Egan et al. 2001, Goldman and Hino 2005, Brunton 2009)

An open-ended question on the criteria respondents most often utilised in their decision to purchase either fresh/chilled chicken or beef was presented in order to ensure that no major variables had been excluded for the fixed response set that was to follow.

What criteria do you use in your decision to purchase [type of fresh/chilled meat] from retail outlets? (Hoffmann 2000, McEachern and Schroder 2002, McCarthy et al. 2003, McCluskey et al. 2005, Krystallis and Arvanitoyannis 2006, Liu et al. 2006)

Respondents were then presented with 24 criteria which were thought to be most influential in the consumer's decision to purchase fresh/chilled chicken and/or beef from a retail store. A six point Likert scale was utilised where respondents were required to rank the importance of each criteria, where 1 was "not at all important" and 6 was "very important".

Criteria	Sources
Appropriately slaughtered (Halal)	Pointing and Teinaz (2004), Bonne and Verbeke (2006), Ahmed (2008).
Halal certificate	Bonne and Verbeke (2006), Shafie and Othman (2006), Ahmed (2008).
Quality assurance label	Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), Sepulveda et al. (2008).
Freshness	Egan et al. (2001), McEachern and Schroder (2002), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), Liu et al. (2006).
Skin colour	McEachern and Schroder (2002), Bonne and Verbeke (2006).
Flesh colour	Barbut (2001), Egan et al. (2001), Killinger et al. (2004), Liu et al. (2006), Krystallis and Arvanitoyannis (2006).
Smell/odour	Bonne and Verbeke (2006), Liu et al. (2006).
Country-of-origin	McEachern and Schroder (2002), Krystallis and Arvanitoyannis (2006).
Intended use	Barbut (2001), Brunton (2009).
Fat content	Egan et al. (2001), McEachern and Schroder (2002), Killinger et al. (2004), McCluskey et al. (2005), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006).
Clean/no flies	Egan et al. (2001), Bonne and Verbeke (2006), Ahmed (2008).
Size	Egan et al. (2001), McEachern and Schroder (2002).
Competitive price	Egan et al. (2001), McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Liu et al. (2006), Ahmed (2008), Brunton (2009).
Value for money	Liu et al. (2006), Brunton (2009).
Available as individual parts	Hsu and Chang (2002), Kennedy et al. (2004), Krystallis and Arvanitoyannis (2006).
Prepacked	Egan et al. (2001), McEachern and Schroder (2002).

Free from chemical/growth promotants	McEachern and Schroder (2002), McCluskey et al. (2005), Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006), Brunton (2009).
Free from antibiotics	Hoffmann (2000), McEachern and Schroder (2002), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Brunton (2009).
Raised in a humane way	Wandel and Bugge (1997), McEachern and Schroder (2002), Blokhuis et al. (2003), Brunton (2009).
Grown on local farms	McEachern and Schroder (2002).
Organically grown	McEachern and Schroder (2002).
Marbling	Egan et al. (2001), Killinger et al. (2004).
Leanness	Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006).
Label/brand	McEachern and Schroder (2002), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Sepulveda et al. (2008).

The next step required respondents to link the criteria they most often utilised in their decision to purchase fresh/chilled meat with a total of eight desired outcomes. According to McEachern and Schroder (2002), upon examining the factors which most influenced the consumers' decision to purchase fresh/chilled meat, it may be possible to link these factors to specific value systems or attitudes.

Desired outcomes	**Sources**
The food has a good taste	Egan et al. (2001), McEachern and Schroder (2002), McCarthy et al. (2003).
The food is safe to eat	McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Liu et al. (2006).
The food is healthy and nutritious	Brug et al. (1995), McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Krystallis and Arvanitoyannis (2006), Liu et al. (2006), Brunton (2009).
The food represents value for money	McCarthy and O'Reilly (1999), McCarthy et al. (2003), Brunton (2009).
The food has good texture/mouth feel	Egan et al. (2001), Liu et al. (2006), Brunton (2009).
The food had been produced in a way that is good for the environment	McGlone (2001), McEachern and Schroder (2002), McCarthy et al. (2003), McCluskey et al. (2005), Ahmad and Juhdi (2008).
The food has been produced in a way that protects worker welfare	Frisvold et al. (1988), McGlone (2001), Bonne and Verbeke (2006).
The food is guaranteed Halal	Pointing and Teinaz (2004), Bonne and Verbeke (2006), Ahmed (2008).

On a scale of 1 to 6 where 1 was "not at all important" and 6 was "very important", respondents were required to rank the importance of each desired value in their

decision to purchase fresh/chilled meat from a retail store. Krystallis and Arvanitoyannis (2006) suggest that consumers concerns for food safety will have a significant impact on the overall purchase of fresh/chilled meat.

Respondents were then asked to rate their overall level of dissatisfaction with the quality of the fresh/chilled meat they had purchased. A seven point ordinal scale was utilised for this group of questions, where 1 was "never" and 7 was "every time". Umberger et al. (2000) revealed that some consumers were concerned with health matters, while others were concerned about the quality or the purchase of meat which delivered greater value for money. Any dissatisfaction caused by these elements will influence the consumers' subsequent purchasing decisions for fresh/chilled meat (Goodson et al. 2002). To conclude, respondents were asked in an open-ended question to identify the main reasons for their dissatisfaction.

What are the main reasons for your dissatisfaction with the quality of the [type of fresh/chilled meat] you have purchased? (Umberger et al. 2000, Egan et al. 2001, Bernues et al. 2003)

Section 2a, 2b and 2c: Fresh fruit and vegetable questionnaire

The ordering of Section Two for the fresh fruit and vegetables survey was as follows: investigating consumers purchasing behaviour for fresh potatoes (2a), followed by spinach (2b) and apples (2c). An option was provided for respondents to proceed to the next sub-section if they did not purchase a particular commodity. A total of seven questions were asked of respondents in each sub-section. The first question was designed to collect information from the respondents on the frequency of purchase.

Thinking specifically about [type of crop], how often do you purchase them? (Zikhan et al. 1999, Ragaert et al. 2004, Bingham et al. 2005, Tam 2006, Yoo et al. 2006, McKinna et al. 2007)
[Multiple responses: Daily; 2-3 times per week; Once a week; Once every 2 weeks; Once a month; Others (please specify)] (Categories were based on results of preliminary research)

Respondents were then asked to respond to an open-ended question for each commodity to identify the variables they used in their decision to purchase.

What criteria do you use in your decision to purchase fresh [type of crop] from retail outlets? (von Alvensleben and Meier 1990, Lai et al. 1998, Baker 1999, Peneau et al. 2006, Slosser 2006, Jemison et al. 2008, Batt 2009, Concepcion 2009)

Respondents were then asked to rank how important a number of variables were in their decision to purchase fresh produce on a 6-point scale where 1 was "not at all important" and 6 was "very important". While a number of criteria were common to each commodity, specific questions on different attributes were added where they were relevant to the target product.

Common criteria	**Sources**
Colour	Beharrell and MacFie (1991), Berdegue et al. (2003), Batt 2004, Ragaert et al. (2004).
Freshness	Ekelund (1990), Yiridoe et al. (2005), McKinna et al. (2007), Batt (2009).
Country-of-origin	Beharrell and MacFie (1991), McKinna et al. (2007).
Competitive price	Arope (1992), Ekelund (1990), Baker (1999), Harker (2001), Batt (2004).
Variety	Arope (1992), Hendrickson et al. (2006), McKinna et al. (2007).
Freedom from pests and diseases	Arope (1992), Baker (1999), Batt (2009), Fernqvist and Ekelund (2009).
Freedom from chemical residues	Ekelund (1990), Beharrell and MacFie (1991), Baker (1999), Caswell (2000), McKinna et al. (2007).
Firmness	Jaegar et al. (1998), Berdegue et al. (2003), Batt (2009).
Size	Caswell (2000), Berdegue et al. (2003), Batt (2004).
Value for money	Caswell (2000), Batt (2009).
Label/brand	Beharrell and MacFie (1991), Caswell (2000), Batt (2009), Fernqvist and Ekelund (2009).
Availability of product information in-store	McKinna et al. (2007), Batt (2009).
Newspapers advertising/catalogues	Baker (1999), Pollard et al. (2002), Boynton-Jarrett et al. (2003), Batt (2009).
Prepacked	Jaeger et al. (2001), Pollard et al. (2002), Fernqvist and Ekelund (2009), Batt (2009).
Organic	Ekelund (1990), Beharrell and MacFie (1991), Yiridoe et al. (2005), McKinna et al. (2007).
Favourable prior purchase	Ekelund (1990), Batt (2009).
Locally grown	Ekelund (1990).

Additional criteria for potatoes were mainly derived from Batt (2009).

Criteria	Sources
Washed	Batt (2009).
Intended use	Pavlista (1997), Batt (2009).
Free from soil	Fernqvist and Ekelund (2009).
Flesh colour	Pavlista (1997), Batt (2009).
Depth of eyes	Batt (2009).
Freedom from sprouting	Batt (2009).
Tuber shape	Pavlista (1997), Batt (2009).
Advice from sales assistant	Batt (2009).
Place of purchase	Conception (2009).

There was a paucity of literature on the factors which were thought to most influence consumers in their decision to purchase fresh spinach. The research on consumer preferences and attitudes for purchasing spinach were commonly aggregated with other types of vegetables such as cabbage, broccoli and cauliflower (Figuie 2003; Bingham et al. 2005; Concepcion 2009) or as a group of variables associated with an analysis of organic product (Dettman and Dimitri 2007; Aryal et al. 2009). The additional criteria thought to be important in the respondents decision to purchase spinach were mainly derived from Slosser (2006) and data collected from the preliminary research.

Criteria	Sources
Leaves	Slosser (2006).
Freedom from blemish and bruise	Slosser (2006).
Free from soil	Slosser (2006), preliminary research.
Free from wilting	Slosser (2006).
Spinach is sold loose	Preliminary research.
Spinach is tied in bunches	Slosser (2006).
Stem removed	Slosser (2006), preliminary research.

On the other hand, a number of studies on consumer preferences for fresh apples were located.

Criteria	Sources
Shape	Armbruster (1990), McCracken et al. (1994), Novotorova and Mazzocco (2008).
Freedom from blemish and bruise	Armbruster (1990), Jaeger et al. (1998), Bett et al. (2001), Batt (2004), Mehinagic et al. (2006), Novotorova and Mazzocco (2008).
Waxed	Bett et al. (2001).
In-store tastings	Ricks et al. (2002).

After respondents had identified and ranked the importance of the criteria they utilised in their decision to purchase fresh fruit and vegetables, the next step was to determine which attributes were related to each of the desired outcomes. Yiridoe et al. (2005) identified eight broad groups of food quality attributes; food safety, human health, environmental effects and animal welfare, visual appeal, nutritional value, taste and freshness. Other additional attributes identified by Caswell (2000) were value, packaging and the production process. For this research, a total of eight desired outcomes or values were utilised.

Desired outcomes	Sources
The food has a good taste	Ekelund (1990), Beharrell and MacFie (1991), Arope (1992), Harker (2001), Yiridoe et al. (2005).
The food is safe to eat	Schifferstein and Oude Ophuis (1998), Baker (1999), Caswell (2000).
The food is healthy and nutritious	Ekelund (1990), Beharrell and MacFie (1991), Arope (1992), Caswell (2000), Harker (2001), Yiridoe et al. (2005).
The food represents value for money	Caswell (2000).
The food has good texture/mouth feel	Abbott (1999), Harker (2001), Shewfelt (2006).
The food had been produced in a way that is good for the environment	Ekelund (1989), von Alvensleben and Meier (1990), Beharrell and MacFie (1991), Grunert and Juhl (1995), Yiridoe et al. (2005).
The food has been produced in a way that protects worker welfare	Beharrell and MacFie (1991), Arope (1992), Wandel and Bugge (1997), Caswell (2000).
The food is guaranteed Halal	Chaudry et al. (1997).

For Muslims, the consumption of any fresh fruit and vegetables are considered to be Halal (Chaudry et al. 1997). However, the researcher found it both necessary and desirable to investigate the attributes used by consumers to assure themselves that the fresh fruit and vegetables purchased were guaranteed Halal.

Respondents were then asked to rank how important each of the desired outcomes were in their decision to purchase fresh fruit and vegetables. A scale of 1 to 6 was used for this question, where 1 was “not at all important” and 6 was “very important”.

Having identified what criteria respondents used to evaluate the quality of the fresh fruit and vegetables available for sale, respondents were then asked to evaluate the extent to which they were satisfied/dissatisfied with the purchase they had made. Sloof et al. (1996) suggested three phases consumers might experience; an increase in liking for the product, no preference or a decline in liking. On a scale of 1 to 7, where 1 was "never" and 7 was "every time", respondents were asked to evaluate the frequency with which they were dissatisfied with the quality of the products they had purchased and the reasons for their dissatisfaction.

Sloof et al. (1996) added that in the appreciation stage, comparative weights were assigned by consumers to each individual quality cue or combination between quality cues and quality attributes. These weights were based upon the experience of consuming the product. According to Batt (2004), consumers are satisfied whenever performance exceeds expectations, while they will become dissatisfied whenever performance falls below expectations. For instance, the physical attributes of the product are commonly used by consumers when selecting their fresh produce in a retail store. Batt (2004), however confirmed that the physical attributes were poor indicators of quality, thus leading consumers to often feel dissatisfied with their purchase.

What are the main reasons for your dissatisfaction with the quality of the [type of crop] you have purchased? (Sloof et al. 1996, Adebanjo 2001, Batt 2004)

Section 3: Dissatisfaction and food safety issues

Questions in Section Three were similar for both surveys. The first question in this section sought to understand how Malaysian consumers respond when they are dissatisfied with the quality of the fresh/chilled meat or fresh fruit and vegetables that they have purchased. According to Liu and McClure (2001), non-western customers behave differently from western customers when they are dissatisfied. Unlike Westerners, Malaysian consumers were found not to complain to retailers, but rather to take private action such as switching to another brand, purchasing from another shop or spreading negative word-of-mouth to their family or friends when

they were dissatisfied (Ramayah et al. 2003; Ndubisi and Ling 2005). Asma (1996) also revealed that Malaysian consumers seldom expressed their dissatisfaction directly. Producers and retailers in the fresh food industry may therefore be misled by situations where there is a low degree of dissatisfaction or few complaints from consumers.

Product attributes were found to be linked to consumers' complaint behaviour (Rousseau 1987; Ramayah et al. 2003). Rousseau (1987) examined consumers' complaint behaviour towards the purchase of different types of products such as household appliances and audio/visual equipment, clothing and jewellery, food products, furniture, motor vehicle accessories and parts, and books and magazines. The findings indicate that when consumers were dissatisfied, their behaviour was influenced by the price of the product, functionality and product enjoyment.

When you are dissatisfied with the quality of [fresh/chilled meat or fresh fruit and vegetables] you have purchased, what do you do? (Eastwood et al. 1987)	
I am always satisfied with my purchase	Galbreath and Rogers (1999), Ndubisi and Ling (2005), preliminary research.
I throw them out	Bonne and Verbeke (2006).
I change shops	Rousseau (1987), Galbreath and Rogers (1999), Liu and McClure (2001), Ndubisi and Ling (2005).
I inform/complain to the seller	Rousseau (1987), Ramayah et al. (2003), Ndubisi and Ling (2005).
I return it to the shop	Liu and McClure (2001).
I just eat it/cook it	Preliminary research.
I stop buying	Colgate and Hedge (2001), Ramayah et al. (2003).
I am more selective the next time I buy	Ramayah et al. (2003).
I purchase less	Segerson (1998).
I do nothing	Ramayah et al. (2003), Ndubisi and Ling (2005).
I change brands	Rousseau (1987), Colgate and Hedge (2001), Liu and McClure (2001), Ramayah et al. (2003).

The following questions in Section Three revolved around food safety issues. Firstly, respondents were asked to rank their level of confidence in their purchase of fresh/chilled meat or fresh fruit and vegetables on a scale from 1 to 6, where 1 was

"not at all confident" and 6 was "very confident". Following this question, an open-ended question asked respondents to justify the reasons for their ranking.

Fresh/chilled meat questionnaire	Fresh fruit and vegetables questionnaire
How confident are you that the fresh/chilled meat that you consume are safe to eat? According to your response in Question 32, what factors lead you to conclude that the fresh/chilled meat that you buy are safe or not safe to eat? (Becker et al. 2000, Hoffmann 2000, Krystallis and Arvanitoyannis 2006)	How confident are you that the fresh fruit and vegetables that you consume are safe to eat? According to your response in Question 35, what factors lead you to conclude that the fresh fruit and vegetables that you buy are safe or not safe to eat? (Schifferstein and Oude Ophuis 1998)

In purchasing fresh food, food safety has been identified as a major consideration (Asp 1999). According to Batt et al. (2006), in Asia, food safety was considered to be the most important variable in meeting consumers' demand. Factors such as microbiological contamination, chemical residues from growth hormones and antibiotics, high fat content and BSE were of great concern for consumers in their decision to purchase fresh/chilled meat (Asp 1999; Krystallis and Arvanitoyannis 2006). In a Muslim country such as Malaysia, Halal certification or the consumers' confidence that the product was Halal was considered crucial in the consumers' decision to purchase fresh/chilled meat (Bonne and Verbeke 2006).

For fresh fruit and vegetables, consumers may have concerns about contamination by pathogenic microorganisms, the origin of the product, genetic modification and the usage of chemicals and fertilisers in the cultivation of the crop. Other concerns about sustainable production, water pollution, animal welfare and waste management were mentioned in order to investigate how confident respondents' were of the Malaysian government's capacity to manage these issues. Respondents were asked to respond on a six point scale where 1 was "not at all confident" and 6 was "very confident".

How confident are you of the Malaysian food system in terms of managing each of the following, where 1 is “not at all confident” and 6 is “very confident”.	
Organically produced food	McEachern and Schroder (2002).
Genetically modified fruit and vegetables	Caswell (2000), Novotorova and Mazzocco (2008).
Chemical residues	McEachern and Schroder (2002).
Fair trade	McEachern and Schroder (2002), Batt et al. (2006).
Sustainable production	McEachern and Schroder (2002), Batt et al. (2006).
Country-of-origin	McEachern and Schroder (2002).
Water pollution	McEachern and Schroder (2002), Said et al. (2003), Batt et al. (2006).
Waste management	Said et al. (2003), Batt et al. (2006).
Conservation biodiversity	McEachern and Schroder (2002).
Animal welfare	Hughes (1995), Harper and Makatouni (2002), McEachern and Schroder (2002), Batt et al. (2006), Bonne and Verbeke (2006), Yiridoe et al. (2005).
Recycling packaging	McEachern and Schroder (2002), Batt et al. (2006).
Halal	Bonne and Verbeke (2006), Chaudry et al. (2007).
Hormones, antibiotics and growth promotants	McEachern and Schroder (2002).
Functional food/probiotics	Verbeke (2005a), Batt et al. (2006).
Microbial contamination	Asp (1999), Batt et al. (2006).

The final two questions in Section Three examined respondents’ experience in avoiding or boycotting a particular food product. Ramayah et al. (2003) revealed that Malaysian consumers tend to boycott a product when they received poor service from retailers or the products failed to meet quality expectations. Klein et al. (2001) demonstrated that people have different and mixed motives for boycotting a product. Segerson (1998) confirmed that the main reason for consumer boycotts was food safety.

Have you ever avoided or boycotted a particular food product because you were concerned about food safety? Is your boycott usually on a temporary basis or permanent? What are the reasons for your boycott? (Segerson 1998, Klein et al. 2001, Ramayah et al. 2003, Klein et al. 2004, Tyran and Engelmann 2005)

Part 4: Socio-demographic factors

The importance of socio-demographic factors as determinants for the purchase of fresh/chilled meat and fresh fruit and vegetables was presented in Part Four. In the

purchase of fresh/chilled meat, older consumers were believed to be more interested in the origin of the meat, whereas younger shoppers, placed greater importance on taste. High income earners demanded more information on the label of packaged meat compared to consumers earning a lower income (Krystallis and Arvanitoyannis 2006). Bonne and Verbeke (2006) demonstrated how women attached greater importance to the method of slaughter than men.

Zenk et al. (2005) demonstrated that correlations existed between socio-demographic characteristics such as income, education level and age and the quality of fresh produce purchased by consumers. Furthermore, family size and the presence of children in the household were found to have influenced consumers decision to purchase fresh/chilled meat or fresh fruit and vegetables from a retail store (Bernues et al. 2003; Bonne and Verbeke 2006; McKinna et al. 2007).

Another reason for collecting socio-demographic variables was for the purpose of segmenting the market. Beside socio-demographics, markets can also be segmented by utilising patterns of usage and consumer preferences (Marcus 1998; Hsu and Chang 2002). In this research, the market was segmented primarily on the basis of identifying respondents' preference to shop at either modern retail outlets or traditional markets when purchasing their fresh/chilled meat or fresh fruit and vegetables.

Socio-demographic characteristics:

1. Gender
2. Age
3. Marital status
4. Including yourself, how many people live in your household?
5. Do you have any children under 18 living in your household?
6. How many?
7. Education level
8. Occupation
9. Your monthly income
10. Ethnicity
11. Your postcode area?

(Bernues et al. 2003, Zenk et al. 2005, Krystallis and Arvanitoyannis 2006, McKinna et al. 2007, Skallerud et al. 2009)

Socio-demographic information from the respondents was also collected with the intention of facilitating a comparison with the national population census. This would enable the researcher to measure how well the sample represented the general population within Malaysia. The Population and Housing Censuses of Malaysia for the year 2000 and the Population Profile by Parliament and State Legislative Assembly Areas Malaysia, both published by the Department of Statistics Malaysia, were the two main sources utilised in this research to accommodate this analysis.

Socio-demographic variables were collected to facilitate a comparison with other research projects in Malaysia that explored consumers purchasing behaviour towards various types of food products. Sidin et al. (2004) found that gender played an important role in the decision making of a household when purchasing food or eating out. Sidin et al. (2004) also demonstrated how other family members may initiate or contribute information about the place of purchase or which brand to buy. Ahmad and Juhdi (2008) gathered demographic information from their respondents in order to investigate the consumers' attitudes towards organic food products in Malaysia. Quah and Tan (2010) demonstrated that although socio-demographic variables were important determinants for the purchasing of organic food products, the effects were different for different ethnic groups in Malaysia.

7.5 Translation procedure and pilot testing the questionnaire

The original questionnaires for both surveys were drafted in English. However, given the multicultural nature of the Malaysian respondents and the knowledge that not all respondents were capable of comprehending the English language well, it was decided that the questionnaire should be prepared in two versions; Malay and English. The original English version of the survey was translated into the Malay language using the back-to-back translation method (Malhotra and Birks 1999). The translation procedure was carried out by two lecturers from the Institute of International Languages, Multimedia University, Malaysia.

No conceptual differences were found in the translated versions of the survey. Subsequently, two pilot test sessions were performed to determine the effectiveness

of the survey instrument. Firstly, a pilot test was conducted among Malaysians who resided in a variety of suburbs in Perth, Western Australia. A pilot test was also administered through email among friends and relatives who lived in Malaysia. A total of 40 respondents participated in both pilot tests. The majority of respondents had no difficulties in understanding the questions presented in the survey. Suggestions from the respondents mainly revolved around the length of the survey. Although the pilot test identified no major complications, amendments were made to the survey instrument according to the feedback received.

7.6 Data collection

The fieldwork was carried out from December 2008 until February 2009. Two postgraduate students were appointed and trained as research assistants in order to assist the researcher in the data collection process. Both students were briefed thoroughly by the researcher to ensure that they really understood all questions and statements in the survey forms. They were also trained how to approach potential respondents.

At the beginning of the interview, respondents were asked three qualifying questions;

(1) “are you Malaysian and residing in the Klang Valley region?”. If the answer was yes, the interviewer proceeded the next question. If the answer was no, the interviewer thanked the respondent and concluded the interview.

(2) “in your household, are you personally involved in the decision to purchase fresh/chilled meat or fresh fruit and vegetables?”. If the answer was yes, respondents were allowed to proceed to the next question. If the answer was no, the interviewer thanked the respondent and the interview was terminated.

(3) “this survey will take approximately 20 minutes to complete. Do you have time to complete this survey?”. If the answer was yes, respondents were eligible to participate in the survey. However, if respondents answered no, the interviewer thanked the respondent and concluded the interview.

Following respondents agreement to participate in the study, respondents were asked to choose their preferred language when responding to the survey.

Respondents who wished to answer in the Malay language were then presented with a copy of the survey in Malay or vice versa.

Respondents were also advised that their participation was entirely voluntary; that all information gathered would be kept strictly confidential; that the study was being conducted solely for academic purposes; and that the study had been approved by the Curtin University of Technology Ethics Committee.

7.7 Data analysis techniques

Before entering the data into the Statistical Package for Social Sciences (SPSS) program, each open-ended question was encoded. According to Malhotra et al. (2008), category codes should be mutually exclusive. Responses that had a similar meaning were collectively grouped into the same code. Two SPSS data files were created: one for the fresh/chilled meat survey and one for the fresh fruit and vegetable survey.

Upon completion, the two SPSS data files were screened. The data files went through an extensive check for consistency, normality of the data and to identify any missing responses using frequency distributions, means and standard deviation. Once the data files were cleaned, the researcher sought assistance from Curtin University of Technology's SPSS advisor, for analysis.

7.7.1 Univariate data analysis

Univariate data analysis was widely used in this study. According to Field (2009), the main objective of univariate data analysis is to describe or summarise the distribution of each individual variable. The types of univariate analyses utilised in this study included descriptive analysis, cross-tabulations, independent t-test, one-way analysis of variance (ANOVA) and non-parametric tests.

Descriptive analysis

Descriptive analysis were used to describe the frequency with which respondents purchased the different types of fresh food, the store choice, variables respondents

used in making their decision to purchase fresh food, the correlation between the various criteria respondents utilised in their decision to purchase the types of fresh food, the desired values, reasons for dissatisfaction with the purchase of each type of fresh food and motives for boycotting a particular food product. The socio-demographic characteristics of the respondents were also examined using descriptive analysis.

Additionally, statistical analysis were used as measures of location (mode and median) in order to determine those occasions where respondents felt unhappy with the quality of the fresh food they had purchased.

Cross-tabulations

A cross-tabulation is a statistical technique that describes two or more variables simultaneously (Malhotra et al. 2008). As mentioned by David and Sutton (2004), cross-tabulation is a technique used to describe and explore the relationships between categorical (nominal or ordinal) variables. David and Sutton (2004) added that cross-tabulations allow for more detailed exploration of the responses between different sub-groups and the exploration of hypotheses in the relationships between variables. Cross-tabulations describe how one variable relates to another. In this study, cross-tabulations were employed to identify any relationship between the clusters identified and the place of purchase. Pearson chi-square is the mathematical procedure used to determine any statistical significance among the variables.

Independent samples t-test

The independent t-test was used to assess whether the two means collected from independent samples differed significantly (Field 2009). In this study, an independent t-test was applied to identify any significant difference in respondents' choice of retail store and the clusters.

One-way analysis of variance (ANOVA)

The analysis of variance (ANOVA) was used to test whether there was any significant difference in the means between three or more discriminate variables (Malhotra et al. 2008; Field 2009). Following a statistically significant omnibus F-

test in one-way ANOVA, a series of post-hoc tests using Scheffe's test and Tukey's HSD were conducted to identify how the means differed from each other.

Non-parametric tests

These involve statistical procedures that do not rely on the restrictive assumptions of parametric tests (Field 2009). Given that parametric tests (t-test and ANOVA) make assumptions about the population from which the sample has been drawn, non-parametric tests do not have stringent requirements and do not make assumptions about the underlying population distribution (Pallant 2001). According to Malhotra et al. (2008), non-parametric tests are appropriate for testing variables from one sample, two independent samples or two related samples. In this study, a non-parametric test was applied to identify any significant differences between the two different data sets (fresh/chilled meat and fresh fruit and vegetables).

7.7.2 Multivariate data analysis

Multivariate analysis is designed to look at several dependent and independent variables simultaneously (Hair et al. 1998; Field 2009). In this study, factor analysis and cluster analysis were used as multivariate techniques to analyse the data sets.

Factor analysis (Principal component analysis)

Factor analysis is a technique for identifying groups of variables (Field 2009). More importantly, factor analysis is used to reduce a dataset to a much smaller number of variables which is more manageable while retaining as much of the information as possible (Hair et al. 1998; Field 2009).

There are two types of factor analysis; confirmatory and exploratory. Confirmatory factor analysis is used to test a hypothesis from a previous theoretical model created from past research. In exploratory factor analysis, the process of grouping the variables in not determined by a prior hypothesis. Exploratory factor analysis was used in this research.

The steps in factor analysis included:

(1) examination of the correlation matrix. This involved an examination of the coefficient, significance levels, determinant of the *R*-matrix, and KMO and Bartletts's Test of Sphericity.
(2) factor extraction. In this study, principal component analysis was used to identify the factors. Only those factors with an Eigenvalue equal to or greater than 1.0 were considered.
(3) factor rotation maximises the loading of each variable on one of the extracted factors while minimising its loading on all other factors (Field 2009). Varimax rotation was chosen for the analysis.
(4) interpretation of factors. Hair et al. (1998) and Field (2009) suggest that only those variables with a factor loading of 0.4 and above should be retained. The factors were then labelled accordingly (Hair et al. 1998).
(5) Reliability analysis was conducted upon the completion of the factor analysis. Cronbach's alpha is the most common measure of scale reliability (Field 2006). A Cronbach's alpha value of 0.7 and above is acceptable.

In this study, principal component analysis was undertaken to identify the factors influencing the respondents' choice of preferred retail outlet, the factors influencing the quality of either fresh/chilled meat or fresh fruit and vegetables, and the factors influencing the respondents' decision to purchase each commodity (chicken and beef, or potatoes, spinach and apples).

Cluster analysis

Cluster analysis is a method for grouping cases based on their similarities on multiple measures (Field 2000). Fifield (2007) mentioned that cluster analysis creates 'clusters' by putting respondents into groups that are as alike as possible (homogeneous) within the cluster and as different as possible (heterogeneous) between the clusters.

Past researchers have commonly used socio-demographic variables such as gender, age and income to segment markets according to consumer preferences in their purchase of fresh food (Thompson 1998; Robinson and Smith 2002; Bernues et al. 2003; Zenk et al. 2005; Krystallis and Arvanitoyannis 2006; McKinna et al. 2007; Skallerud et al. 2009). However in this study, the researcher discovered limitations

in utilising socio-demographics to segment the respondents. One of the reasons for this was consumers with similar socio-demographic backgrounds do not necessarily observe the same purchasing pattern when buying fresh food from a retail store. Shewfelt (2006) demonstrated that in a number of instances, consumers had been segmented according to their product preferences rather than socio-demographic profiles. Malundo (1996) [cited in Shewfelt 2006] segmented peach consumers into categories such as 'sweet and juicy', 'tastes like a peach' and 'tart and crunchy'. West (2000) [cited in Shewfelt 2006] segmented fresh tomato consumers according to their flavour preferences such as 'vine-ripened', 'sweet', 'tart/sour' and 'not bland'.

Cluster analysis was undertaken in order to identify groups of consumers which preferred to purchase their fresh/chilled meat or fresh fruit and vegetables from either a modern retail outlet, traditional markets or from both retail outlets. Each cluster identified was anticipated to respond differently to the variables that may influence their decision to purchase fresh food from different retail stores. The final cluster solution was saved and utilised to identify any significant differences between clusters. Different groups were identified for both surveys.

7.8 Chapter summary and implications

This chapter has described the methodological approach taken in order to achieve the objectives of this research study. A comprehensive review of the literature on consumers' attitudes, beliefs, preferences for food quality, and their store choice behaviour was required to develop the research instruments that were then utilised in the data collection process. Procedures for the collection of data were also discussed.

The researcher encountered several difficulties in the early stages and while the fieldwork was in progress. Firstly, the researcher received only limited financial assistance. The fieldwork activities included a lot of travelling from one place to another, the payment of research assistants (2), 600 photocopies of questionnaires and tokens of appreciation to respondents for their participation.

Regrettably, the researcher received little cooperation from modern retailers to conduct the survey on their premises. Prior to conducting the fieldwork, the researcher sought approval to undertake the survey in shopping malls, but permission was not granted. Only one modern retailer agreed to participate in the research with two conditions; (1) the questionnaires and findings of the research must be reported to them for approval; and (2) payment was involved to rent space in the shopping mall. Due to financial constraints, the researcher was unable to accept this offer.

Due to the large size of the research instruments, time was an impediment. On several occasions, potential respondents indicated their interest to participate in the research, but many of them had to withdraw part way through the questionnaire as; (1) the survey was too long; (2) they were in a rush to go home to cook or needed to go back to the office; (3) they were feeling tired; or (4) accompanying children were starting to get restless.

During the administration of the surveys, the researcher observed different attitudes among ethnic groups towards the research. Generally, the Malay respondents were the most cooperative group to participate in this research. Although the English version of the survey was prepared to attract more respondents from other ethnic groups, the responses from this group remained low.

8. Descriptive results of survey respondents

8.1 Chapter Outline

Chapter Eight describes the respondents who participated in the quantitative study. Part One describes those respondents who participated in the fresh/chilled meat survey, whereas Part Two describes the respondents in the fresh fruit and vegetables survey. Part Three compares the two data sets. The chapter concludes with Part Four, which validates the sample by comparing both data sets with other research involving Malaysian consumers and data from the Malaysian Department of Statistics.

8.2 Part One: Profile of respondents who purchased fresh/chilled meat

In the Klang Valley, more females (85.8%) were responsible for purchasing fresh/chilled meat for household consumption compared to males (Table 8.1).

Table 8.1: Gender of respondents

	N	%
Male	37	14.2
Female	223	85.8
	260	100.0

More than one half of the respondents (56.2%) were aged between 26 to 34 years old (Table 8.2).

Table 8.2: Age of respondents

	N	%
18-25 years old	32	12.3
26-34 years old	146	56.2
35-44 years old	47	18.1
45-54 years old	20	7.7
55-64 years old	12	4.6
65 and above	3	1.2
	260	100.0

The next largest age group was between the ages of 35 to 44 years old (18.1%), followed by those respondents aged between 18 to 25 years old (12.3%). A total of 20 respondents (7.7%) were aged between 45 to 54 years old, while 4.6% of the respondents were between the ages of 55 to 64 years old. The most elderly group, those aged 65 years and above, comprised only 1.2%.

The majority of respondents (78.8%) reported that they were married (Table 8.3).

Table 8.3: Marital status of respondents

	N	%
Single	49	18.8
Married	205	78.8
Divorced/widowed	4	1.5
Others	2	0.8
	260	100.0

Some 18.8% of respondents were single, while 1.5% of respondents were divorced or widowed.

The majority of the respondents households (64.4%) had between three to five occupants (Table 8.4).

Table 8.4: The number of people living in respondents household

	N	%
1	9	3.6
2	36	14.2
3	54	21.3
4	58	22.9
5	51	20.2
6	22	8.7
7	8	3.2
8	15	5.9
	253	100.0

For some 14.2% of respondents, there were at least two people living in the same household. Some 8.7% of respondents were living together with six other people,

while 5.9% of respondents had eight people living in the same house. Only 3.6% of the respondents lived alone.

Respondents were asked to provide further information about the number of children under the age of 18 who were living in the same household. More than half of the respondents (63.7%) had at least one child who was under the age of 18 years living in the same household (Table 8.5).

Table 8.5: Do you have any children under 18 living in your household

	N	%
Yes	163	63.7
No	93	36.3
	256	100.0

For those respondents who had at least one child under the age of 18 residing in the same household, some 59.3% of respondents had at least one child who was aged less than 5 years old living in the household (Table 8.6).

Table 8.6: Numbers of children under 18 living in respondents household

	Numbers of children				N	%
	1	2	3	4		
Children aged less than 5 years old	77	37	9	1	124	59.3
Children aged between 6-12 years old	27	21	6		54	25.8
Teenagers aged between 13-17 years old	21	5	5		31	14.8
					209	

Some 25.8% of respondents had at least one child aged between 6 to 12 years old living in the same house, and 14.8% of respondents had at least one teenager aged between 13 to 17 years old residing in the same house.

The largest percent of respondents possessed either an undergraduate degree or a professional certificate (39.6%) (Table 8.7).

Table 8.7: Education level of respondents

	N	%
Primary school	1	0.4
Secondary school	41	15.8
Diploma	61	23.5
First degree/professional certificate	103	39.6
Postgraduate	54	20.8
	260	100.0

A total of 61 respondents (23.5%) held college diplomas, while 20.8% of respondents had completed a postgraduate degree. Some 15.8% of respondents had completed high school. Only one respondent had not attended secondary school.

While the respondents were engaged in a great diversity of occupational groups, some 12.2% of the respondents were clerical workers (Table 8.8).

A further 10.9% of respondents were executives or housewives respectively, while 9.0% of respondents were government employees.

Some 6.3% of respondents were students, while 5.5% of respondents were academics. A total of 3.9% of respondents were employed as entrepreneurs, research assistants or secretaries, respectively.

Table 8.8: Occupations of respondents

	N	%
Accountant	5	1.9
Academics	14	5.5
Administrative officer	1	0.4
Assistant manager	3	1.2
Audiologist	1	0.4
Auditor	2	0.8
Bank executive	7	2.8
Chemist	1	0.4
Cleaner	2	0.8
Clerk	31	12.2
Consultant	3	1.2
Database management officer	2	0.8
Engineer	9	3.5
Entrepreneur	10	3.9
Executive	28	10.9
Financial advisor	1	0.4
Government officer	23	9.0
Graphic designer	2	0.8
Human resource executive	3	1.2
Housewife	28	10.9
Lawyer	1	0.4
Manager	5	1.9
Marketer	5	1.9
Microbiologist	1	0.4
Nurse	1	0.4
Pensioner	8	3.1
Programmer	6	2.4
Quantity surveyor	2	0.8
Research assistant	10	3.9
Secretary	10	3.9
Soldier	1	0.4
Student	16	6.3
Teacher	8	3.1
Technician	5	1.9
	255	

The largest group of respondents (23.5%) had a monthly household income between RM3,001 to RM4,500 (Table 8.9).

Some 19.2% of respondents reported a monthly income between RM1,501 to RM3000, while 16.9% of respondents indicated that their monthly income was between RM4,501 to RM6,000. Some 13.5% of respondents had a monthly

household income less than RM1,500, while 11.9% had a total monthly household income of more than RM9,001.

Table 8.9: Monthly income of respondents

	N	%
Less than RM1,500	35	13.5
RM1,501-RM3,000	50	19.2
RM3,001-RM4,500	61	23.5
RM4,501-RM6,000	44	16.9
RM6,001-RM7,500	27	10.4
RM7,501-RM9,000	12	4.6
RM9,001 and above	31	11.9
	260	100.0

The majority of respondents (93.5%) were Malay (Table 8.10).

Table 8.10: Ethnicity of respondents

	N	%
Malay	243	93.5
Chinese	7	2.7
Indians	2	0.8
Others	8	3.1
	260	100.0

Some 3.1% of respondents indicated that they were from various ethnic groups located on the east coast of Malaysia, mainly from Sabah and Sarawak. Chinese made up 2.7% of the sample, while Indians (0.8%) comprised the smallest group.

The sample distribution showed that the largest group of respondents resided in the area of Bandar Baru Bangi (17.4%), followed by Kajang (16.7%) and Kuala Lumpur (13.9%) (Table 8.11).

Other respondents were from the area of Puchong (5.8%), Putrajaya (5.0%), Ampang (5.0%) and Shah Alam (4.7%).

Table 8.11: Respondents postcode area

Postcode	Area	N	%
40000-40470	Shah Alam	12	4.7
41200-41250	Klang	6	2.3
42300	Bandar Puncak Alam	1	0.4
42600	Jenjarom	1	0.4
42700	Banting	1	0.4
43000-43009	Kajang	43	16.7
43200	Cheras	2	0.8
43300	Seri Kembangan	14	5.4
43400	Serdang	8	3.1
43500	Semenyih	2	0.8
43600	Bangi	4	1.6
43650	Bandar Baru Bangi	45	17.4
43700	Beranang	1	0.4
43800	Dengkil	1	0.4
43900	Sepang	7	2.7
45100	Sungai Ayer Tawar	2	0.8
45600	Batang Berjuntai	1	0.4
47000	Sungai Buloh	1	0.4
47100-47180	Puchong	15	5.8
47300-47830	Petaling Jaya	9	3.5
47500-47650	Subang Jaya	7	2.7
48000-48020	Rawang	4	1.6
50200-59200	Kuala Lumpur	36	13.9
62000-62652	Putrajaya	13	5.0
63000	Cyberjaya	2	0.8
64000	KLIA	2	0.8
68000	Ampang	13	5.0
68100	Batu Caves	5	1.9
		258	

8.3 Part Two: Profile of respondents who purchased fresh fruit and vegetables

Again, it was noted that more females (79.6%) were responsible for the purchase of fresh fruit and vegetables in the household compared to males (20.4%) (Table 8.12).

Table 8.12: Gender of respondents

	N	%
Male	58	20.4
Female	226	79.6
	284	100.0

The majority of respondents (50.7%), were aged between 26 to 34 years old (Table 8.13).

Table 8.13: Age of respondents

	N	%
18-25 years old	40	14.1
26-34 years old	144	50.7
35-44 years old	51	18.0
45-54 years old	37	13.0
55-64 years old	12	4.2
65 and above	0	0.0
	284	100.0

Some 18.0% of respondents were aged between 35 to 44 years old, 14.1% were aged between 18 to 25 years and 13.0% were aged between 45 to 54 years. No respondents over the age of 65 participated in the fresh fruit and vegetable purchasing survey.

The majority of respondents (72.2%) were married (Table 8.14).

Table 8.14: Marital status of respondents

	N	%
Single	72	25.4
Married	205	72.2
Divorced/widowed	7	2.5
Others	0	0.0
	284	100.0

Some 25.4% of respondents revealed that they were single, while the remaining respondents (2.5%) were either divorced or widowed.

Some 24.5% of respondents had at least three people living together in the same household (Table 8.15).

Some 17.5% of respondents had either four or five people living in the same household, followed by 12.0% of respondents who lived with six people. Only 11.3% of the respondents lived with one other person in their household.

Table 8.15: The number of people living in respondents household

	N	%
1	12	4.4
2	31	11.3
3	67	24.5
4	48	17.5
5	48	17.5
6	33	12.0
7	17	6.2
8	10	3.6
9	2	0.7
10	2	0.7
11	3	1.1
12	1	0.4
	274	100.0

Some 57.5% of respondents had at least one child who was under the age of 18 years living in the same household (Table 8.16).

Table 8.16: Do you have any children under 18 living in your household

	N	%
Yes	161	57.5
No	119	42.5
	280	100.0

More than half of the respondents (54.2%) who had a child under the age of 18 years residing in the same household had at least one child aged less than 5 years old (Table 8.17).

Table 8.17: Numbers of children under 18 living in respondents household

	Numbers of children				N	%
	1	2	3	4		
Children aged less than 5 years old	69	39	12	3	123	54.2
Children aged between 6-12 years old	37	19	10		66	29.1
Teenagers aged between 13-17 years old	24	13	1		38	16.7
					227	

Some 29.1% of respondents had a child aged between 6 to 12 years old residing in the same household, while 16.7% of respondents had at least one teenager who was aged between 13 to 17 years old living in the same household.

With regard to the highest level of education the respondents had attained, some 29.6% held either an undergraduate degree or a professional certificate (Table 8.18).

Table 8.18: Education level of respondents

	N	%
Primary school	3	1.1
Secondary school	70	24.6
Diploma	70	24.6
First degree/professional certificate	84	29.6
Postgraduate	57	20.1
	284	100.0

Some 24.6% of respondents had either completed high school or held a diploma, while 20.1% of respondents had earned a postgraduate degree. Only 1.1% of respondents had not attended secondary school.

Once again it was observed that the largest group of respondents worked as clerical staff (16.2%) (Table 8.19).

Some 10.5% of respondents were business executives, 9.0% were government officers, while 7.2% were managers.

Some 5.1% of respondents were either housewives or research assistants, 4.7% were students, 4.3% were academics, 3.9% were accountants and 3.6% were employed as bank executives or computer programmers.

Table 8.19: Occupations of respondents

	N	%
Accountant	11	3.9
Academics	12	4.3
Administrative officer	2	0.7
Bank executive	10	3.6
Cashier	1	0.4
Clerk	45	16.2
Counsellor	1	0.4
Dentist	1	0.4
Editor	2	0.7
Engineer	7	2.5
Entrepreneur	7	2.5
Executive	29	10.5
Farmer	1	0.4
Financial advisor	2	0.7
Government officer	25	9.0
Graphic designer	3	1.1
Housewife	14	5.1
Interpreter	1	0.4
IT executive	3	1.1
Journalist	1	0.4
Lawyer	1	0.4
Librarian	2	0.7
Manager	20	7.2
Marketer	4	1.4
Nurse	3	1.1
Pensioner	4	1.4
Pharmacist	2	0.7
Programmer	10	3.6
Police officer	1	0.4
Quantity surveyor	1	0.4
Receptionist	2	0.7
Research assistant	14	5.1
Secretary	8	2.9
Student	13	4.7
Supervisor	2	0.7
Teacher	5	1.8
Technician	7	2.5
	276	

Some 26.4% of respondents had an average monthly income in the range of RM1,501 to RM3,000, followed by 24.6% of respondents who had an average monthly income between RM3,001 to RM4,500 (Table 8.20).

Table 8.20: Monthly income of respondents

	N	%
Less than RM1,500	25	8.8
RM1,501-RM3,000	75	26.4
RM3,001-RM4,500	70	24.6
RM4,501-RM6,000	49	17.3
RM6,001-RM7,500	25	8.8
RM7,501-RM9,000	23	8.1
RM9,001 and above	17	6.0
	284	100.0

Only 8.8% of respondents had an average monthly income less than RM1,500.

The largest group of respondents (90.1%) were Malay (Table 8.21).

Table 8.21: Ethnicity of respondents

	N	%
Malay	256	90.1
Chinese	12	4.2
Indians	6	2.1
Others	10	3.5
	284	100.0

Some 4.2% of respondents were Chinese, while 3.5% of respondents represented ethnic groups from Sabah and Sarawak. Indians comprised only 2.1% of the sample.

In this survey, the largest group of respondents were from Kuala Lumpur (22.3%) (Table 8.22).

Some 13.3% of respondents were from Bandar Baru Bangi and 12.6% of the respondents were from Kajang.

Other respondents resided in such areas as Batu Caves (8.6%), Petaling Jaya (5.8%), Ampang (5.4%), Klang (5.0%), Seri Kembangan (4.7%), Rawang (4.3%) and Shah Alam (4.3%).

Table 8.22: Respondents postcode area

Postcode	Area	N	%
40000-40450	Shah Alam	12	4.3
41200-42100	Klang	14	5.0
42200	Kapar	1	0.4
42800	Tanjung Sepat	1	0.4
43000	Kajang	35	12.6
43100	Hulu Langat	1	0.4
43200	Cheras	8	2.9
43300	Seri Kembangan	13	4.7
43500	Semenyih	3	1.1
43600	Bangi	6	2.2
43650	Bandar Baru Bangi	37	13.3
43800	Dengkil	1	0.4
43900	Sepang	4	1.4
43950	Sungai Pelek	1	0.4
46000-47830	Petaling Jaya	16	5.8
47000	Sungai Buloh	1	0.4
47100-47150	Puchong	4	1.4
47610	Subang Jaya	1	0.4
48000-49200	Rawang	12	4.3
50000-59200	Kuala Lumpur	62	22.3
62050-62662	Putrajaya	5	1.8
64000	KLIA	1	0.4
68000	Ampang	15	5.4
68100	Batu Caves	24	8.6
		278	

8.4 Part Three: Comparing the respondent data sets

A non-parametric test was performed to compare the two data sets. For those respondents who purchased fresh/chilled meat and those who purchased fresh fruit and vegetables, there was no significant difference between the samples with regard to the gender of the respondent (Table 8.23).

Table 8.23: Non-parametric tests for gender of respondents

Gender	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Male	37	14.2	58	20.4	0.058
Female	223	85.8	226	79.6	
N	260	100.0	284	100.0	

Similarly, the Mann-Whitney test was unable to identify any difference between the samples with regard to the age distribution of the respondents (Table 8.24).

Table 8.24: Non-parametric tests for age of respondents

Age	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
18-25 years old	32	12.3	40	14.1	0.616
26-34 years old	146	56.2	144	50.7	
35-44 years old	47	18.1	51	18.0	
45-54 years old	20	7.7	37	13.0	
55-64 years old	12	4.6	12	4.2	
65 and above	3	1.2	0	0.0	
N	260	100.0	284	100.0	

Nor was there any significant difference between the samples with regard to the marital status of the respondents (Table 8.25).

Table 8.25: Non-parametric tests for marital status of respondents

Marital status	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2- tailed)
	n	%	n	%	
Single	49	18.8	72	25.4	0.093
Married	205	78.8	205	72.2	
Divorced/widowed	4	1.5	7	2.5	
Others	2	0.8	0	0.0	
N	260	100.0	284	100.0	

No significant difference could be detected between the samples with regard to the number of people living in the respondents household (Table 8.26).

Table 8.26: Non-parametric tests for the number of people living in respondents household

Number of people	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
1	9	3.6	12	4.4	0.340
2	36	14.2	31	11.3	
3	54	21.3	67	24.5	
4	58	22.9	48	17.5	
5	51	20.2	48	17.5	
6	22	8.7	33	12.0	
7	8	3.2	17	6.2	
8	15	5.9	10	3.6	
9	0	0.0	2	0.7	
10	0	0.0	2	0.7	
11	0	0.0	3	1.1	
12	0	0.0	1	0.4	
N	253	100.0	274	100.0	

Nor was there any difference in the number of children under the age of 18 who were living in the same household as the respondents (Table 8.27).

Table 8.27: Non-parametric tests for any children under 18 living in respondents household

Any children under 18 years old	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Yes	163	63.7	161	57.5	0.145
No	93	36.3	119	42.5	
N	256	100.0	280	100.0	

The Mann-Whitney test was also unable to detect any significant difference between the samples with regard to the education level of the respondents (Table 8.28).

Table 8.28: Non-parametric tests for education level of respondents

Education level	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Primary school	1	0.4	3	1.1	0.087
Secondary school	41	15.8	70	24.6	
Diploma	61	23.5	70	24.6	
First degree/professional certificate	103	39.6	84	29.6	
Postgraduate	54	20.8	57	20.1	
N	260	100.0	284	100.0	

Nor was it possible to identify any significant difference between the monthly income of the respondents between the two samples (Table 8.29).

Table 8.29: Non-parametric tests for monthly income of respondents

Income	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Less than RM1,500	35	13.5	25	8.8	0.473
RM1,501-RM3,000	50	19.2	75	26.4	
RM3,001-RM4,500	61	23.5	70	24.6	
RM4,501-RM6,000	44	16.9	49	17.3	
RM6,001-RM7,500	27	10.4	25	8.8	
RM7,501-RM9,000	12	4.6	23	8.1	
RM9,001 and above	31	11.9	17	6.0	
N	260	100.0	284	100.0	

Finally, the Mann-Whitney test was unable to identify any significant difference in the ethnic groups who participated in each survey (Table 8.30).

Table 8.30: Non-parametric tests for ethnicity of respondents

Ethnicity	Fresh/chilled meat survey		Fresh fruit and vegetable survey		Sig (2-tailed)
	n	%	n	%	
Malay	243	93.5	256	90.1	0.167
Chinese	7	2.7	12	4.2	
Indian	2	0.8	6	2.1	
Others	8	3.1	10	3.5	
N	260	100.0	284	100.0	

Theoretically, both data sets could therefore be combined and analysed together as one sample.

8.5 Part Four: Sample validation and review

Census 2000 revealed that in Malaysia, the number of men outnumbered the number of women (Malaysian Department of Statistics 2000). It was reported that there were 104 males for every 100 females. However, in the decision to purchase either fresh/chilled meat or fresh fruit and vegetables, the majority of respondents were females (82.5%) (Table 8.31).

Table 8.31: Gender of respondents

Gender	Fresh/chilled meat survey	Fresh fruit and vegetables survey	Total	%
Male	37	58	95	17.5
Female	223	226	449	82.5
	260	284	554	100.0

This finding concurs with previous consumer research undertaken in Malaysia where the majority of food was purchased by females: 62.5% in Nooh et al. (2007), 63.8% in Ahmad and Juhdi (2008) and 57.1% in Wan Omar et al. (2008).

With regards to the age group of respondents, more than half of the respondents for both surveys were aged between 26 to 44 years old. Response rates were found to decline with the increasing age of the respondents despite offering a 'Green Bag' as a token of appreciation upon completing the survey. Factors such as the survey was too long or they did not have the time to complete the survey were among the reasons commonly given by shoppers from the older age groups when they were asked to participate. High numbers of participants from the younger generation were also found in other research involving Malaysian consumers such as Haque and Khatibi (2005), Ghazali et al. (2006a) and Wan Omar et al. (2008). Nevertheless, the small number of elderly respondents was no cause for alarm as data available from the Malaysian Department of Statistics (2009) indicated that 63.5% of the Malaysian population was in the age group of 15 to 64 years olds. In

this study, 98.9% of respondents who participated in the fresh/chilled meat survey fell within this range, and 100.0% of respondents for the fresh fruit and vegetables survey.

Age was also connected with the marital status of the respondents. According to the 2000 census, the minimum age for a Malaysian female to marry was 25.1 years, while for the male it was 28.6 years (Malaysian Department of Statistics 2009). Since the largest group of respondents were aged between 26 to 34 years, most of them were married.

The analyses from both surveys demonstrated that the largest group of respondents had three or four people living in the same household. Heng and Guan (2007) revealed in their research that the average household size for Malaysians was approximately 4 persons. The Malaysian Department of Statistics (2008) report that the average number of occupants per household for the area of Selangor and Kuala Lumpur was 3.9 persons and 4.1 persons respectively. Mokhlis (2006) reported that the average number of people in a Malaysian household was 5, which consisted of two adults and 3 children. The findings also revealed that there are a large number of households with five to eight people residing in the same house. It is not uncommon for Malaysians to live with their parents, in-laws or close relatives (DaVanzo and Chan 1994).

Most respondents from both surveys indicated that they had at least one child under the age of 18 who lived together in the same household. A similar result indicated that more than half of the respondents from both surveys had at least one child under the age of five years old.

Most respondents from both surveys indicated that they possessed at least an undergraduate degree or a professional certificate. As the survey was conducted in the Klang Valley, which is a highly urbanised area, this result was not unexpected (Othman 1990; Haque and Khatibi 2005).

In terms of occupation, the results revealed that the majority of respondents were employed either within the private sector, the government sector or were operating

their own businesses. As the majority of respondents for both surveys were female and married, it is possible to conclude that the sample was comprised primarily of married women who were actively participating in the labour force. Othman (1990) noted that the purchasing behaviour of working women may differ from non-working women.

The middle income group was defined as those households earning between RM2,000 to RM4,000 per month (Malaysia 2008). Rice and Mahmoud (1999) reported that in 1995, 47.0% of Malaysian households were in the middle income group. The findings of this research were not dissimilar to the results of Ghazali et al. (2006a) and Mutum and Ghazali (2006) who found that 57.6% and 62.9% of respondents respectively belonged to the middle income group. For the fresh/chilled meat survey, 42.7% of respondents and 53.0% of the respondents from the fresh fruit and vegetables survey were drawn from the middle income group.

The Malaysian Department of Statistics (2008) report that 65.0% of the Malaysian population are Malay, followed by Chinese (26.0%), Indians (7.7%) and other races (1.0%). Thus it was no surprise to find that the majority of respondents who participated in both surveys were Malay: 93.5% of the respondents for the fresh/chilled meat survey, and 90.1% of the respondents for the fresh fruit and vegetables survey. This result compares favourably with other surveys involving the purchasing behaviour of Malaysian consumers: 70.0% of Malay respondents in Haque and Khatibi (2006) and 55.6% in Ong et al. (2008). Mokhlis (2006) proposed that Malay respondents were generally keen and cooperative when participating in surveys compared to non-Malay respondents.

To eliminate bias, the interviews were conducted on randomly sampled respondents at shopping malls and traditional markets in the Klang Valley. According to Euromonitor (2006), over 70.0% of groceries were sold through supermarkets in Malaysia. Therefore, the decision to conduct the research in both retail outlets was undertaken with the intention of achieving a broad spectrum of income distribution and levels of education among respondents.

However, the findings from both surveys have identified differences in the residential areas from which the respondents were drawn. The largest group of respondents for the fresh meat survey were from Bandar Baru Bangi, while most respondents in the fresh fruit and vegetables survey were from Kuala Lumpur. Although Kuala Lumpur has a great mixture of ethnic groups, areas such as Wangsa Maju, Setiawangsa, Titiwangsa, Lembah Pantai and Bandar Tun Razak have a higher Malay population, whereas Kepong, Segambut, Bukit Bintang, Seputeh and Cheras have a higher Chinese population (Malaysian Department of Statistics 2006). Overall, the ratio of respondents residing in the Klang Valley region was well distributed.

The findings of this chapter have demonstrated that the key characteristics of the sample drawn for both surveys in this study are not significantly different. Potentially, this enables the surveys to be combined, thereby greatly enhancing the capacity of the results to be extended to the broader population in the Klang Valley region.

9. Store choice

9.1 Chapter outline

Chapter Nine reports on the criteria which most influence the respondents' choice of retail store, revealing where they purchase the majority of their fresh/chilled meat and fresh fruit and vegetables.

Part One provides a description of the respondents' store choice behaviour when purchasing fresh/chilled meat. Respondents' store choice behaviour when purchasing fresh fruit and vegetables is reported in Part Two. Part Three provides a synthesis which compares and contrasts the variables which were perceived to be the most influential in the respondents' choice of retail store. Part Four summarises this chapter.

9.2 Part One: Respondents' store choice behaviour when purchasing fresh/chilled meat

Some 95 respondents (36.5%) purchased the majority of their fresh/chilled meat from wet markets or fresh markets (Table 9.1).

Table 9.1: Principal place of purchase for fresh/chilled meat

Modern retail outlets	**N**	**%**
Hypermarket	52	20.0
Supermarket	35	13.5
Traditional markets		
Wet market/Fresh market	95	36.5
Night market	31	11.9
Farmers market	17	6.5
Grocery store/mini market	17	6.5
Wholesale market	13	5.0
	260	100.0

Modern retail outlets: hypermarkets (20.0%) and supermarkets (13.5%) were the second most preferred place to purchase fresh/chilled meat among respondents. The remaining respondents purchased their fresh/chilled meat from several other

traditional retail formats including the night market (11.9%), farmers markets (6.5%), grocery stores or mini markets (6.5%) and wholesale markets (5.0%).

Most respondents (51.2%) purchased fresh/chilled meat one time per week (Table 9.2).

Table 9.2: Frequency of purchasing fresh/chilled meat

	N	%
Daily	4	1.5
2-3 times per week	35	13.5
Once a week	133	51.2
Once every 2 weeks	68	26.2
Once a month	13	5.0
Others	7	2.7
	260	100.0

Some 26.2% of respondents purchased fresh/chilled meat one time every two weeks, while some 13.5% purchased fresh/chilled meat two to three times per week. Only 5.0% of respondents purchased fresh/chilled meat one time per month, while some 2.7% of respondents purchased fresh/chilled meat occasionally such as during festive seasons or family gatherings. The percentage of respondents purchasing their fresh/chilled meat daily was relatively small (1.5%).

Respondents who most often purchased fresh/chilled meat from a supermarket (62.9%) were also more likely to purchase from hypermarkets (20.4%) and/or from grocery stores or mini markets (22.5%) (Table 9.3).

Respondents who frequently purchased fresh/chilled meat from a hypermarket (67.6%) were also more likely to purchase from wholesale markets (24.0%) and/or from supermarkets (23.8%).

Respondents who frequently purchased fresh/chilled meat from a wet market or a fresh market (69.9%) were more likely to purchase from other traditional markets such as wholesale markets (20.0%), night markets (19.6%), grocery stores/mini markets (15.8%) and/or farmers markets (13.5%).

Table 9.3: The proportion of the total amount of the fresh/chilled meat purchased from the following retail outlet

	Percent						
	Supermarket	Hypermarket	Wet market/ Fresh market	Farmers market	Night market	Wholesale market	Grocery store/mini market
Supermarket	62.9	23.8	16.5	15.0	14.6	8.3	13.3
Hypermarket	20.4	67.6	17.9	6.8	11.4	10.3	13.4
Wet market/ Fresh market	12.7	17.4	69.9	13.3	13.6	7.0	13.8
Farmers market	8.7	3.5	13.5	77.0	8.5	2.0	7.6
Night market	16.9	16.2	19.6	16.3	63.2	12.0	12.3
Wholesale market	12.6	24.0	20.0	10.0	16.3	55.9	12.8
Grocery store/ mini market	22.5	13.8	15.8	22.5	14.0	30.0	67.9

For those respondents who purchased the majority of the fresh/chilled meat consumed from a farmers market (77.0%), grocery stores (22.5%) provided the second most important source of fresh/chilled meat.

Respondents who purchased the majority of the fresh/chilled meat consumed in their household from a night market (63.2%), purchased 16.3% of the fresh/chilled meat consumed from wholesale markets, 14.6% from supermarkets, 14.0% from grocery stores/mini markets and/or 13.6% from wet markets/fresh markets.

Respondents who frequently purchased fresh/chilled meat from a wholesale market (55.9%) were more likely to purchase from grocery stores/mini markets (30.0%).

Grocery store shoppers (67.9%) also purchased fresh/chilled meat from the wet markets/fresh markets (13.8%), hypermarkets (13.4%), supermarkets (13.3%), wholesale markets (12.8%), and/or night markets (12.3%).

Freshness (85.2%) was the most frequently cited variable used by respondents in their decision to purchase fresh/chilled meat from a retail store (Table 9.4).

Table 9.4: Variables respondents consider in their decision to purchase fresh/chilled meat from their most preferred retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	101	70	25	13	4	213	85.2
Price	36	53	45	24	16	174	69.6
Cleanliness	17	49	35	18	16	135	54.0
Halal	59	13	9	11	6	98	39.2
Variety/a lot of choices	3	12	17	19	12	63	25.2
Location – near house/office	9	9	9	7	10	44	17.6
Loyalty to the same vendors	6	4	14	10	9	43	17.2
Quality assurance	4	8	9	6	3	30	12.0
Facilities provided	1	5	7	4	6	23	9.2
Comfortable environment	3	1	5	8	3	20	8.0
Size	3	6	5	5	1	20	8.0
Type of shop	1	3	7	2	6	19	7.6
Texture	2	1	1	4	3	11	4.4
Colour	1	3	4			8	3.2
Country-of-origin	1	1	1	4	1	8	3.2
Quantity			4	1	3	8	3.2
Intended use	2		2	1	1	6	2.4
No smell	1	1	2			4	1.6
I can self select		1	2	1		4	1.6
No diseases		1		2	2	5	2.0
Organic		1	2	1	1	5	2.0
Nicely packed			1	2	2	5	2.0
Promotion			1	2	2	5	2.0
Based on previous experience		1		1	1	3	1.2
Number of respondents	250						

The second group of variables which were most frequently cited included price (69.6%) and cleanliness (54.0%). Other variables which were most frequently cited included Halal (39.2%), and variety (25.2%). In terms of Halal, respondents were concerned mainly with the appropriateness of slaughtering the chicken or cattle. A retail outlet displaying a Halal certificate or logo was considered advantageous and could attract more customers to purchase from the shop.

A variety of choice and the ability to choose many different portions enabled respondents to purchase the desired meat in the most appropriate form for the way in which they intended to cook and present the meat. For example, several respondents preferred to purchase a whole dressed chicken, while others preferred to purchase chicken proportions such as chicken drumsticks, chicken wings and others.

Other variables respondents considered in their decision to purchase fresh/chilled meat were location (17.6%), loyalty to the same vendors (17.2%) and quality assurance (12.0%). Location described the concept of convenience as respondents indicated that their preferred retail outlet was close to where they either lived or worked. Loyalty to the same vendor was a major consideration for several respondents on each occasion that they purchased fresh/chilled meat. Respondents were loyal to those vendors who were friendly, trustworthy and knowledgeable, and provided customers with the services they required.

The need for the meat to be free from any disease (2.0%), organic (2.0%), nicely packed (2.0%) and promoted (2.0%) were among the least frequently cited variables that influenced the respondents' decision to purchase fresh/chilled meat from a retail store. This does not suggest that respondents were less concerned about food safety or organic in their purchase of fresh/chilled meat, but rather that respondents implicitly assumed that the meat products offered for sale were free of disease and natural. As for fresh/chilled meat that was nicely packed and promoted, this mainly related to that product that was available from a supermarket or hypermarket. Given that more than half of the respondents (66.4%) were reported to purchase the majority of their fresh/chilled meat from a traditional retail outlet where the meat was neither pre-packed or aggressively promoted, it comes as no surprise to learn that these two variables were so infrequently cited by respondents in their decision to purchase fresh/chilled meat.

When respondents were asked to indicate how important a number of attributes were in their decision to purchase, a total of sixteen variables were found to be equally important in the respondents' decision to purchase fresh/chilled meat from a retail store (Table 9.5).

The variables included the physical attributes of the meat (freshness, clean and good quality produce); convenience (a wide range of fresh produce, I can self select, all product is clearly priced and labelled, a wide range of other fresh products, product is easily accessible, a quick fast checkout, a lot of sections and everything under one roof); value (value for money and competitive price), and the characteristics of

the retail outlet (fresh produce is refrigerated and good customer service/friendly staff).

Table 9.5: Importance of variables influencing respondents' criteria of preferred retail outlet

	Mean	SD
Freshness	5.84[a]	0.39
Cleanliness	5.79[a]	0.48
Good quality produce	5.74[a]	0.56
A wide range of fresh produce	5.61[a]	0.60
I can self select	5.52[a]	0.78
All product is clearly priced	5.51[a]	0.77
Value for money	5.51[a]	0.74
A wide range of other fresh products	5.49[a]	0.72
Product easily accessible	5.44[a]	0.79
Competitive price	5.42[a]	0.96
Product is clearly labelled	5.39[a]	0.89
Good customer service/friendly staff	5.28[a]	0.85
Quick/fast checkout	5.26[a]	0.98
Fresh produce is refrigerated	5.25[a]	0.94
A lot of sections (wet and dry sections)	5.24[a]	0.95
Everything all under one roof	5.19[a]	0.98
Origin of the product is clearly displayed	5.10[b]	1.06
Well organised/well laid out	5.10[b]	0.96
Offer special prices or discounts	5.06[c]	1.11
Local produce	5.06[c]	1.03
Easy parking	5.04[c]	1.01
Trading hours	5.00[c]	0.96
Knowledgeable staff	5.00[c]	1.02
Near my house/work place	4.91[d]	1.04
Loyalty/always shop there	4.75[e]	1.12
Attractive display/presentation	4.73[e]	1.03
Opportunity to bargain on price	4.70[e]	1.16
Trolley and baskets are provided	4.68[e]	1.41
Return/refund policy	4.66[e]	1.14
Sample of the product	4.23[f]	1.32
Air-conditioned	4.21[f]	1.52
Advertising on radio/tv/newspaper	3.69[g]	1.31
Credit facilities	3.55[h]	1.64
Shopping points/loyalty programs	3.53[h]	1.46
Cater for kids	3.52[h]	1.58

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Those variables which were considered the least important included advertising for meat products on radio, television or newspapers, and several other features which described the retail outlet including credit facilities, shopping points/loyalty

programs and the extent to which the retail outlet catered for kids. These characteristics were found only among the modern retail formats.

The reality is however, that food shopping is a low involvement, habitual process (McKinna et al. 2007). It is unlikely therefore that respondents will utilise all 35 variables when purchasing fresh/chilled meat from a retail store. Therefore, principal component analysis with varimax rotation and Kaiser normalisation was applied in order to group the variables into a smaller set of components. Principal component analysis revealed five constructs which collectively explained 63.5% of the variance (Table 9.6).

Table 9.6: Factors influencing respondents' criteria of preferred retail outlet

	Factor				
	1	**2**	**3**	**4**	**5**
Product easily accessible	0.855				
Product is clearly labelled	0.765				
Quick fast checkout	0.734				
Local produce	0.668				
Origin of the product is clearly displayed	0.647				
Trading hours	0.625				
Loyalty/always shop there	0.603				
Air-conditioned		0.746			
Advertising on radio/tv/ newspaper		0.737			
Cater for kids		0.737			
Trolley and baskets are provided		0.697			
Credit facilities		0.686			
Shopping points/loyalty programs		0.635			
Good quality produce			0.818		
Freshness			0.790		
Clean			0.707		
Everything all under one roof				0.726	
Near my house/work place				0.720	
Easy parking				0.712	
Opportunity to bargain on price					0.692
Eigenvalue	6.584	2.204	1.462	1.347	1.106
Percent variance	19.67	17.11	10.76	9.77	6.19
Cumulative variance	19.67	36.78	47.54	57.32	63.51
Cronbach's alpha	0.858	0.838	0.736	0.664	
Factor mean	5.15^{b}	3.87^{d}	5.79^{a}	5.05^{b}	4.70^{c}

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 6.58 was comprised of seven items. This factor was labelled as “perceived risk”, for these items collectively explained the perceived risk which operated at both the product level and the store level. Consumers could minimise temporal or time risks if products were easily accessible, checkouts were operating quickly and efficiently, and the stores were open at a time that was convenient to the shopper. The risks associated with the product itself could be lessened when the product was clearly labelled and the origin of the product was clearly displayed. Loyalty is itself a risk mitigation mechanism. With a Cronbach’s alpha of 0.86, this construct was very reliable. With a mean of 5.2, this factor was found to be the second most important in the respondents’ decision to purchase fresh/chilled meat.

Factor Two had an Eigenvalue of 2.20 and a Cronbach’s alpha of 0.84. The six items that loaded onto this factor clearly described the “characteristics of a modern retail outlet” where the premises were generally air-conditioned, which provided a more comfortable environment for the shoppers and their children. Consumers could also benefit from the facilities provided by most modern retail outlets including credit card facilities and the use of trolleys and baskets for shopping. Promotional items such as shopping points/loyalty programs and advertised goods were additional features of modern retailing. However, this factor was the least important criteria in the respondents’ decision to purchase fresh/chilled meat from a retail store.

Factor Three, with an Eigenvalue of 1.46 included three items: good quality produce, freshness and cleanliness. This factor was labelled as “quality”. With a Cronbach’s alpha of 0.74, not only was the construct considered reliable, but it was also the singly most important construct in the respondents’ decision to purchase fresh/chilled meat from a retail store.

Factor Four, with an Eigenvalue of 1.35 was also comprised of three items. Factor Four described the concept of “convenience”. When purchasing fresh food, consumers may consider going to a particular retail outlet where all the households’ consumables are available under one roof, the location of the store is close to their house or workplace, and there is ample car parking space. As the concept of

convenience facilitated the shopper's purchasing experience, this factor was the second most important construct respondents considered in their decision to purchase fresh/chilled meat from a retail outlet. However, the Cronbach's alpha for this factor was only 0.66.

Factor Five, with an Eigenvalue of 1.11 captured only one item which described "price". Respondents perceived price differently, depending on the place of purchase. For example, the price of fresh/chilled meat in a traditional market is not commonly fixed and thus consumers have an opportunity to bargain. Conversely, in modern retail outlets, the prices are fixed. Nevertheless, competition between the retail chains is often based on offering the lowest price which in the end, benefits the consumers. This was the third most important factor respondents considered in their decision to purchase fresh/chilled meat from a retail outlet.

In thinking about the quality criteria respondents most often used in their decision to purchase fresh/chilled meat, irrespective of the retail store, freshness (82.8%) was the most frequently cited variable (Table 9.7).

Other quality variables most frequently cited by respondents included Halal (57.6%), cleanliness (43.6%) and price (35.2%). Quality was also associated with a range of variables which described the physical appearance of the meat such as colour (17.6%), texture (15.6%) and smell (14.8%). Quality was also perceived to mean safe to eat (13.6%) and to be free from any chemicals and growth promotants (10.8%).

One of the variables that was cited the least often related to the conditions under which the meat was stored (cold/chilled/frozen) at 1.6%.

Table 9.7: Variables respondents consider when they think about the quality of fresh/chilled meat

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	85	73	26	13	10	207	82.8
Halal	87	15	17	16	9	144	57.6
Cleanliness	19	42	33	11	4	109	43.6
Price	15	15	30	14	14	88	35.2
Colour	15	15	6	6	2	44	17.6
Texture	3	13	11	6	6	39	15.6
No smell	7	9	14	4	3	37	14.8
Safe to eat	2	4	9	10	9	34	13.6
Variety/a lot of choices	2	10	9	7	1	29	11.6
Freedom from chemical/growth promotants	1	7	9	6	4	27	10.8
Local	3	9	4	1	2	19	7.6
Country-of-origin	3	2	4	4	4	17	6.8
Quality assurance	4	4	2	5	1	16	6.4
Label	3	3	2	4	2	14	5.6
Size	1	3	3	5	2	14	5.6
Taste		1	4	3	5	13	5.2
Nutrition		2	5	4	2	13	5.2
Nicely packed		2	1	3	5	11	4.4
Organic		2	1	3	2	8	3.2
I can self select			2	3	3	8	3.2
Quantity		2	1	3	1	7	2.8
Comfortable environment		1	1	2	1	5	2.0
Display area well organised/ products arranged in good order			1	3	1	5	2.0
Cold/chilled/frozen storage		1	1	1	1	4	1.6
Based on previous experience		1		1		2	0.8
Time and energy factor				1	1	2	0.8
	250						

Respondents were then asked to indicate the extent to which they agreed with 18 quality statements on a scale of 1 to 6, where 1 was “I disagree a lot” and 6 was “I agree a lot”. Eleven variables were afforded the highest measure of agreement (Table 9.8).

For the majority of respondents, good quality meant that the meat was fresh, safe to eat, and free from chemical residues, pests and diseases, and antibiotics and growth promotants. Good quality meat was nutritious, tasted good and was highly correlated with value (that is, respondents would not be disappointed after consuming the meat, they were able to utilise most of the product, and thus the

purchase represented good value for money). While Halal was also perceived to be a reliable indicator of good quality, the high standard deviation indicated considerable variance in the responses suggesting that the need for the meat to be Halal was not important for all respondents.

Table 9.8: The meaning of quality of fresh/chilled meat

Quality means that the product…	Mean	SD
is fresh	5.86[a]	0.51
is safe to eat	5.85[a]	0.51
is guaranteed Halal	5.71[a]	0.96
is nutritious	5.66[a]	0.67
is free from chemical residues	5.65[a]	0.81
is free from pests and diseases	5.57[a]	0.84
I will not be disappointed when I eat the product	5.51[a]	0.87
is free from antibiotics/growth promotants	5.46[a]	0.98
will taste good	5.44[a]	0.85
I will be able to use most if not all of the product I have purchased	5.43[a]	0.89
is good value for money	5.42[a]	0.98
has been produced in a way that is good for the environment	5.27[b]	0.94
was produced in a way that did not endanger the farmers	5.15[c]	1.04
was produced with due regard for animal welfare	5.04[d]	1.12
looks attractive	4.78[e]	1.12
will have a long shelf life	4.75[e]	1.25
is attractively packaged	4.68[f]	1.19
will be more expensive	3.71[g]	1.59

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

That variable which was the least often associated with good quality was a high price, suggesting that in purchasing fresh meat, there was little association between quality and price.

Principal component analysis revealed three factors which collectively explained 74.8% of the variance (Table 9.9).

Factor One, with an Eigenvalue of 3.67, captured three items that accounted for 27.9% of the variance. The Cronbach's alpha for this factor was 0.82. Collectively, these three items described "meat production" which was comprised of the extent to which respondents were concerned about the environment, farmers welfare and animal welfare. This was the second most highly rated factor respondents considered when thinking about the quality of fresh/chilled meat.

Table 9.9 Factors influencing quality of fresh/chilled meat

Quality means that the product…	Factor		
	1	**2**	**3**
was produced in a way that did not endanger the farmers	0.866		
has been produced in a way that is good for the environment	0.817		
was produced with due regard for animal welfare	0.784		
looks attractive		0.844	
is attractively packaged		0.778	
will have a long shelf life		0.769	
is safe to eat			0.873
is fresh			0.870
Eigenvalue	3.665	1.262	1.053
Percent variance	27.96	25.89	20.90
Cumulative variance	27.96	53.85	74.76
Cronbach's alpha	0.821	0.768	0.758
Factor mean	5.16[b]	4.74[c]	5.86[a]

where those items with the same superscript are not significantly different at p = 0.05

Factor Two, with an Eigenvalue of 1.26 also had three items. It accounted for 25.9% of the variance. The Cronbach's alpha for this factor was 0.77. Items in Factor Two described the utility of the meat product: looks attractive, attractively packaged and long shelf life. Despite the benefits the product may have to offer, this was the least highly rated factor in the respondents' mind when considering the quality of fresh/chilled meat.

Factor Three, with an Eigenvalue of 1.0, captured two items that accounted for 20.9% of the variance. The Cronbach's alpha for this factor was 0.76. This factor was labelled as "safe" for it captured the respondents concerns with regards to food safety and freshness. Not unexpectedly, Factor Three was the most highly rated factor in the respondents' evaluation of meat quality.

Most respondents (87.1%) recognised that there was a difference in the quality of the fresh/chilled meat purchased from both the modern and traditional retail outlets (Table 9.10).

Table 9.10: Are there any difference in the quality of fresh/chilled meat

	N	%
Yes	222	87.1
No	33	12.9
	255	

Some 62.2% of respondents believed that the traditional retail markets offered better quality fresh/chilled meat compared to modern retail outlets (Table 9.11).

Table 9.11: Which of the two retail outlets offer best quality of fresh/chilled meat

	N	%
Modern retail outlets	98	37.8
Traditional markets	161	62.2
	259	

Irrespective of their preferred place of purchase, the majority of respondents (97.9%) cited freshness as that criteria which was most able to differentiate between the quality of the fresh/chilled meat offered by modern retail outlets and the traditional markets (Table 9.12).

Other variables which respondents considered to differentiate between the quality of the fresh/chilled meat purchased from their preferred retail outlet were cleanliness (38.7%), Halal (29.4%) and price (21.4%). Halal required that the meat be appropriately slaughtered according to Islamic regulations and a Halal certificate from the Department of Islamic Development Malaysia (JAKIM) be displayed by vendors.

Whether the meat was nicely packaged (13.9%), chilled or frozen (13.9%), there was a variety of choice (10.9%), and attractive appearance (10.1%) provided yet another group of variables that respondents considered to differentiate between the quality of the fresh/chilled meat available from different retail outlets. The equipment used to cut and prepare the meat (9.7%) and a good relationship with trusted vendors (9.2%) were other variables cited by respondents as influencing

their perception of the quality of the fresh/chilled meat offered by different retail stores.

Table 9.12: Variables respondents consider to differentiate the quality of fresh/chilled meat is better from another retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	120	66	32	14	1	233	97.9
Cleanliness	32	28	13	12	7	92	38.7
Halal (Slaughtered/logo)	21	19	15	11	4	70	29.4
Price	4	19	13	7	8	51	21.4
Nicely packaged	10	10	11	2		33	13.9
Chilled/frozen storage	14	7	5	4	3	33	13.9
Variety/a lot of choices	3	8	5	5	5	26	10.9
Attractive appearance	4	9	3	3	5	24	10.1
Meat being cut using modern equipment	3	6	6	6	2	23	9.7
Good relationship between vendors and customers	2	1	8	9	2	22	9.2
Quality	3	3	1	2	8	17	7.1
Origin of the meat is known	4	3	4	1	2	14	5.9
Smell	3	4	2	2	1	12	5.0
Colour	4	5	3			12	5.0
Freedom from chemicals/growth promotants	2	6	2	1	1	12	5.0
I can self select	3	4	2	1	1	11	4.6
Safe to eat	1	2	2	4	1	10	4.2
Label	1	2	3	1	1	8	3.4
Freedom from diseases	1	1	3	3		8	3.4
A prestige outlet	1	4			2	7	2.9
Taste			5		1	6	2.5
From Malaysia/local supplies		1		1	4	6	2.5
Comfortable environment		1	2			3	1.3
Organic			2	1		3	1.3
Trading hours	1			1	1	3	1.3
Size	1			1		2	0.8
I can buy other products			1	1		2	0.8
Easy access			1			1	0.4
I am satisfied			1			1	0.4
Fast service			1			1	0.4
Near my house				1		1	0.4
	238						

Respondents were then asked to indicate the extent to which they agreed with 21 statements about their preferred choice of retail outlet when purchasing fresh/chilled meat. On a scale of 1 to 6, where 1 was “I disagree a lot” and 6 was “I

agree a lot", eight variables were afforded similar measures of agreement (Table 9.13). Four of these variables favoured shopping in a modern retail format, while another four variables favoured the traditional retail outlets.

Table 9.13: Respondents level of agreement/disagreement with each of these statements

	Mean	SD
Products in supermarkets are clearly priced	5.30[a]	0.81
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.14[a]	1.03
Chicken and beef are fresher in traditional markets	4.99[a]	1.16
Consumers can bargain on price in wet markets	4.99[a]	1.23
Retailers in the traditional market are more knowledgeable about the products they sell	4.85[a]	1.15
I prefer to buy my fresh meat from the same vendor in the traditional markets	4.83[a]	1.20
Fresh meat is displayed better in supermarkets	4.82[a]	1.02
The children feel comfortable when I shop at supermarkets	4.69[a]	1.24
Supermarkets offer a wider range of fresh food	4.58[b]	1.29
I buy my other household goods from supermarkets but I buy my chicken and beef supplies from traditional markets	4.50[c]	1.49
Supermarkets operate everyday while traditional markets operate only on certain days of the week	4.49[c]	1.52
Supermarkets offer better customer service than the traditional markets	4.47[c]	1.19
Traditional markets offer better quality meat at a much cheaper price	4.44[c]	1.29
Traditional markets seldom have a good or clean environment	4.36[c]	1.21
I cannot buy the other household items I need if I shop at traditional markets	4.23[d]	1.44
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	4.04[e]	1.44
The quality of the fresh meat available is better in supermarkets	4.02[e]	1.29
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.99[e]	1.31
At traditional markets, the vendors remember my name	3.84[f]	1.57
I go to supermarkets because of the shopping points I get	3.66[g]	1.51
I often meet my friends when I shop at traditional markets	3.38[h]	1.46

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

With regards to modern retail outlets, three of the four variables were perceived to reduce risk in the shopping experience (all products were clearly priced, fresh meat was displayed better, and a more comfortable atmosphere for the shopper and children), while the fourth variable was associated with convenience (I can buy all my groceries at the same time).

For those respondents who preferred to purchase their fresh/chilled meat from a traditional market, quality (fresher meat), price (opportunity to bargain on price), and a superior shopping experience (knowledgeable vendors and loyalty to the same vendor) were considered to be better than modern retail formats.

Using SPSS, cluster analysis was then utilised as a tool to group cases based on the similarity of responses to these same variables. Hierarchical cluster analysis suggested 2-5 cluster solutions, however, it quickly became apparent that a 2 cluster solution was the most appropriate as all mean scores were found to be significantly different (Table 9.14).

Cluster 1 described “modern retail shoppers”. This group had a higher mean score on convenience and enjoyed shopping at modern retail outlets because products were clearly priced, the stored offered a greater variety of fresh food, and the fresh meat was displayed better. Respondents purchasing from modern retail outlets were less concerned about building any long term or enduring relationship with the vendors, and they generally disliked the idea of going to a traditional market merely to purchase fresh/chilled meat.

Conversely, Cluster 2 described the “traditional market shoppers”. This group believed that the meat was both fresher and cheaper in the traditional market. They were more loyal as they purchased fresh/chilled meat from the same vendors and were prepared to go out of their way to purchase fresh/chilled meat from traditional markets, even although they often purchased other household products from supermarkets. They also enjoyed the opportunity to bargain on price.

Table 9.14: Respondents level of agreement/disagreement with each of these statements according to cluster

	Cluster 1		Cluster 2		P
	Mean	SD	Mean	SD	
The quality of the fresh meat available is better in supermarkets	4.82	0.90	3.62	1.26	0.000
Supermarkets operate everyday while traditional markets operate only on certain days of the week	5.02	1.28	4.27	1.53	0.000
Consumers can bargain on price in wet markets	4.55	1.36	5.29	1.02	0.000
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.59	0.64	4.95	1.07	0.000
I often meet my friends when I shop at traditional markets	2.84	1.25	3.79	1.45	0.000
Supermarkets offer a wider range of fresh food	5.33	0.83	4.19	1.28	0.000
At traditional markets, the vendors remember my name	3.34	1.56	4.24	1.44	0.000
I cannot buy the other household items I need if I shop at traditional markets	4.77	1.27	3.91	1.44	0.000
I go to supermarkets because of the shopping points I get	3.91	1.58	3.47	1.44	0.027
The children feel comfortable when I shop at supermarkets	5.17	0.95	4.44	1.29	0.000
Traditional markets seldom have a good or clean environment	4.96	1.14	4.07	1.12	0.000
Supermarkets offer better customer service than the traditional markets	4.96	0.93	4.26	1.21	0.000
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.74	1.33	4.23	1.22	0.004
I buy my other household goods from supermarkets but I buy my chicken and beef supplies from traditional markets	3.19	1.29	5.30	0.99	0.000
Traditional markets offer better quality meat at a much cheaper price	3.54	1.18	5.01	1.067	0.000
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	4.33	1.36	3.85	1.45	0.011
Fresh meat is displayed better in supermarkets	5.19	0.86	4.64	1.02	0.000
Chicken and beef are fresher in traditional markets	4.14	1.19	5.51	0.79	0.000
I prefer to buy my fresh meat from the same vendor in the traditional markets	3.96	1.25	5.36	0.84	0.000
Products in the supermarkets is clearly priced	5.48	0.65	5.23	0.89	0.014
Retailers in the traditional market are more knowledgeable about the products they sell	4.22	1.25	5.23	0.91	0.000

where 1 is "I disagree a lot" and 6 is "I agree a lot"

To verify the findings, a cross-tabulation was then used to investigate any relationship between the clusters that had been identified and the preferred place of

purchase. Respondents belonging to Cluster 1 purchased the majority of their fresh/chilled meat from hypermarkets (79.2%) and supermarkets (75.0%) (Table 9.15).

Table 9.15: Place of purchase by cluster

	Cluster 1		Cluster 2		Total
	n	%	n	%	
Supermarket	24	75.0	8	25.0	32
Hypermarket	38	79.2	10	20.8	48
Wet market/Fresh market	16	18.6	70	81.4	86
Farmers market	2	13.3	13	86.7	15
Night market	3	10.3	26	89.7	29
Wholesale market	5	38.5	8	61.5	13
Grocery store/mini-market	6	35.3	11	64.7	17
Total	94		146		240

[Pearson chi-square =79.16, df =6, p = 0.000]

Conversely, those respondents from Cluster 2 were more likely to buy a greater proportion of their fresh/chilled meat from the night market (89.7%), farmers market (86.7%) and the wet market/fresh market (81.4%).

Further confirmation was achieved when a cross-tabulation was used to differentiate the variables which best described the quality of the meat purchased according to those who opted to buy from modern retail outlets and those who preferred the traditional markets when purchasing fresh/chilled meat (Table 9.16).

While freshness was the most frequently cited variable, irrespective of the place of purchase, a greater proportion of the respondents who purchased fresh/chilled meat from the traditional markets cited freshness as that variable which was best able to differentiate the quality of the meat offered by the alternative retail formats.

Conversely, for those who preferred to purchase fresh/chilled meat from modern retail outlets, the cleanliness of the store and thus of the product was highlighted.

There was not much variation between the respondents' perceptions that the fresh/chilled meat was guaranteed Halal, as some 25.5% of the respondents who

shopped from modern retail outlets believed that the meat was Halal, while 30.1% of the respondents who purchased meat from the traditional markets believed that the meat was Halal. Similarly, the findings revealed that there was little difference in terms of the variety of the fresh/chilled meat available from modern retail outlets (9.6%) or the traditional market (10.3%).

Table 9.16: Clusters by which variables respondents consider to differentiate the quality of fresh/chilled meat is better from another retail outlet

	Cluster 1 (94)		**Cluster 2 (146)**	
	N	%	N	%
Freshness	67	71.3	140	95.9
Cleanliness	50	53.2	39	26.7
Halal (Slaughtered/logo)	24	25.5	44	30.1
Price	22	23.4	15	10.3
Nicely packaged	22	23.4	9	6.2
Chilled/frozen storage	21	22.3	11	7.5
Variety	9	9.6	15	10.3
Attractive appearance	14	14.9	10	6.8
Meat being cut using modern equipment	8	8.5	4	2.7
Good relationship between vendors and customers	3	3.2	19	13.0
Quality	9	9.6	5	3.4
Origin of the meat is known	4	4.3	9	6.2
Smell	1	1.1	11	7.5
Colour	1	1.1	10	6.8
Freedom from chemicals/growth promotants	2	2.1	9	6.2
I can self select	2	2.1	3	2.1
Safe to eat	3	3.2	7	4.8
Label	5	5.3	2	1.4
Freedom from diseases	3	3.2	5	3.4
A prestige outlet	5	5.3	0	0.0
Taste	0	0.0	5	3.4
From Malaysia/local supplies	0	0.0	6	4.1
Comfortable environment	2	2.1	1	0.7
Organic	0	0.0	1	0.7
Trading hours	2	2.1	1	0.7
Size	1	1.1	1	0.7
I can buy other products	1	1.1	1	0.7
I am satisfied	1	1.1	0	0.0

Modern retail shoppers (Cluster 1) clearly believe that the price at which fresh/chilled meat is offered in supermarkets and hypermarkets is a better indication of the quality than the prices offered in traditional markets. Superior product packaging (23.4%), chilled or frozen storage cabinets (22.3%), a more attractive appearance (14.9%) and the equipment used to cut the meat (8.5%) were the key

variables that differentiated the quality of the meat offered by modern retail outlets from that offered by the traditional market.

Conversely, a good relationship between vendors and customers in the traditional markets (13.0%) was an important motive considered by shoppers in determining the quality of the fresh/chilled meat offered in the traditional market.

An Independent samples t-test was then performed to investigate the relationship between the factors influencing respondents' criteria of preferred retail outlet and the clusters. Results indicate that there were significant differences for Factor Two, Factor Four and Factor Five between the clusters (Table 9.17).

Table 9.17: Results of principal component analysis (criteria of preferred retail outlet) by cluster

	Cluster 1		Cluster 2		Sig.
	Mean	**SD**	**Mean**	**SD**	
Factor 1: Perceived risk	5.11	0.73	5.14	0.68	0.713
Factor 2: Characteristics of a modern retail outlet	4.19	0.99	3.81	1.07	0.006
Factor 3: Quality	5.78	0.40	5.81	0.39	0.592
Factor 4: Convenience	5.29	0.86	5.00	0.90	0.013
Factor 5: Price	4.50	1.29	4.88	1.04	0.019

Factor Two and Factor Four were found to be significantly more important for modern retail shoppers who preferred a clean and comfortable place to shop and who sought greater convenience.

Factor Five on the other hand was found to be significantly more important for respondents in Cluster 2. Traditional market shoppers tend to be more price conscious and enjoy the opportunity to bargain on price with vendors that they trust and have a good relationship with.

An Independent samples t-test was then performed to investigate the relationship between the factors influencing the quality of fresh/chilled meat and the clusters. Results indicate that there no significant differences for each of the factors between the clusters (Table 9.18).

Table 9.18: Results of principal component analysis (quality of fresh/chilled meat) by cluster

	Cluster 1		Cluster 2		Sig.
	Mean	**SD**	**Mean**	**SD**	
Factor 1: Meat production	5.11	0.89	5.19	0.89	0.508
Factor 2: Utility	4.72	1.09	4.78	0.89	0.644
Factor 3: Safe	5.85	0.41	5.88	0.49	0.586

Socio-demographic variables were also tested against each cluster. Socio-demographic variables have been widely used for the purpose of segmenting and profiling consumers since it is relatively easy to collect, measure and analyse these types of variables (Schlegelmilch et al. 1996). However, much of the literature has demonstrated that socio-demographic variables are often ineffective for segmenting the behaviour of consumers. In classifying shoppers according to segment, Boedeker and Marjanen (1993) found that socio-demographic characteristics provided a very narrow perspective of consumer behaviour. Schlegelmilch et al. (1996) found that there was very little value in utilising socio-demographic characteristics for segmenting consumers who were more conscious about the environment. Similarly, according to Romano and Stefani (2006), taking into account only demographic variables in segmenting consumers' behaviour towards the purchase of food would not provide a very informative classification due to the weak correlation between these variables and purchase behaviour. For instance, Ramona and Stefani (2006) found that consumers' behaviour towards food safety was determined by trust variables such as the source and its reliability, rather than individual characteristics. In this study, variables such as gender, age, marital status, highest level of education attained, race and income were found not to be significantly different between the clusters.

Besides the socio-demographic variables, psychographics have been identified as a more important dimension in predicting consumer behaviour (Boedeker 1995). However, there are serious limitations in using psychographics in consumer intercept surveys and hence these measures were not employed.

9.3 Part Two: Respondents' store choice behaviour when purchasing fresh fruit and vegetables

Some 77 respondents (27.1%) purchased the majority of their fresh fruit and vegetables from hypermarkets (Table 9.19).

Table 9.19: Principal place of purchase for fresh fruit and vegetables

Modern retail outlets	**N**	**%**
Hypermarket	77	27.1
Supermarket	55	19.4
Traditional markets		
Wet market/Fresh market	58	20.4
Night market	49	17.3
Farmers market	16	5.6
Grocery store/Mini market	16	5.6
Wholesale market	13	4.6
	284	100.0

Some 20.4% of respondents purchased the majority of their fresh fruit and vegetables from wet markets/fresh markets, some 19.4% from supermarkets and 17.3% of respondents purchased the majority of their fresh fruit and vegetables from night markets. Farmers markets (5.6%), grocery stores (5.6%), and the wholesale markets (4.6%) were insignificant by comparison as the major place of purchase for fresh fruit and vegetables.

The majority of respondents (68.7%) purchased fresh fruit and vegetables at least one time per week (Table 9.20).

Table 9.20: Frequency of purchasing fresh fruit and vegetables

	N	**%**
Daily	2	0.7
2-3 times per week	59	20.8
Once a week	134	47.2
Once every 2 weeks	58	20.4
Once a month	58	20.4
Others	27	9.5
	284	100.0

Some 20.4% of respondents purchased fresh fruit and vegetables one time every two weeks or one time per month.

Respondents who purchased the majority of their fresh fruit and vegetables from either a supermarket or a hypermarket were found to purchase from 9.3% - 20.8% of their households fresh fruit and vegetables from the traditional markets (Table 9.21).

Table 9.21: The proportion of the total amount of the fresh fruit and vegetables purchased from the following retail outlet

	Supermarket	Hypermarket	Wet market/ Fresh market	Farmers market	Night market	Wholesale market	Grocery store/mini market
Supermarket	64.4	17.3	16.4	22.5	18.1	14.7	13.1
Hypermarket	16.6	66.7	17.2	14.9	14.8	13.1	13.5
Wet market/ Fresh market	18.6	12.6	64.2	12.9	14.7	13.0	13.1
Farmers market	9.3	12.9	12.1	56.2	15.5	13.3	21.0
Night market	14.1	20.8	11.3	17.1	64.4	19.3	18.9
Wholesale market	13.8	17.5	20.0	16.7	8.2	64.0	11.8
Grocery store/ mini market	18.6	17.2	11.3	20.0	15.6	20.0	59.7

Respondents who purchased the majority of fresh fruit and vegetables from a wet market/fresh market (64.2%) were also more likely to purchase from wholesale markets (20.0%), hypermarkets (17.2%) and supermarkets (16.4%).

Respondents who purchased the majority of the fresh produce consumed in their household from a farmers market (56.2%), purchased 22.5% of their fresh fruit and vegetables from supermarkets and/or from grocery stores (20.0%).

Respondents who purchased the majority of fresh produce from a night market (64.4%) were also more likely to purchase from supermarkets (18.1%), grocery stores/mini markets (15.6%), and/or farmers markets (15.5%).

For those respondents who purchased the majority of the fresh produce consumed from a wholesale market (64.0%), grocery stores/mini markets (20.0%) and night markets (19.3%) provided the second most important source of fresh fruit and vegetables.

Similarly, those respondents who purchased the majority of their fresh fruit and vegetables from grocery stores (59.7%) also purchased fresh fruit and vegetables from farmers markets (21.0%) and/or the night market (18.9%).

In making their decision to purchase fresh fruit and vegetables from a retail store, most respondents (83.3%) mentioned freshness, followed by price (73.7%) (Table 9.22).

Other variables most frequently cited included variety (27.0%), quality (25.6%) and cleanliness (23.3%). The concept of convenience was also cited by 19.6% of respondents who considered proximity to their place of residence. Another group of variables most often cited by respondents included a comfortable environment (12.9%) and easy access to the retail outlet (7.8%).

Freedom from pests and diseases (1.5%), Halal (1.1%), and safe to eat (0.7%) were among the least frequently cited variables respondents considered in making their decision to purchase fresh fruit and vegetables from a retail store. Again, this does not indicate that respondents were less concerned about food safety or issues related to Halal when purchasing fresh fruit and vegetables, but rather that respondents implicitly assumed that the fresh produce available from any retail outlet were safe and Halal to eat. Given that fresh fruit and vegetables are generally Halal, it is understandable to find that Halal was one of the least cited variables considered by respondents when purchasing fresh produce.

Table 9.22: Variables respondents consider in their decision to purchase fresh fruit and vegetables from their most preferred retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	135	64	22	4		225	83.3
Price	52	78	46	17	6	199	73.7
Variety/a lot of choices	14	4	29	20	6	73	27.0
Quality	13	30	10	10	6	69	25.6
Cleanliness	13	22	17	8	3	63	23.3
Location – near my house/office	13	6	12	12	10	53	19.6
Comfortable environment	6	5	11	6	7	35	12.9
Easy access	1	5	8	4	3	21	7.8
Texture	2	9	7	2		20	7.4
Knowledgeable and friendly vendors	2		3	9	3	17	6.3
Display area products were arranged in a good order	1	3	4	5	4	17	6.3
Taste	3	3	5	3	3	17	6.3
Colour	3	6	3		1	13	4.8
I can self-select		2	3	6	2	13	4.8
One stop center for grocery	4	3		1	3	11	4.1
Quantity	1		4	5		10	3.7
Nicely packed	1	4	1	2	1	9	3.3
Origin of fruit and vegetables		4	1	1	2	8	2.9
Size		1	3	3	1	8	2.9
Trading hours	3			1	3	7	2.6
Freedom from chemicals		1	2		3	6	2.2
Promotion		2	2	1		5	1.9
Label			1	3	1	5	1.9
Freedom from pests and diseases		1	1	1	1	4	1.5
Intended use	2	1			1	4	1.5
Halal	1	2				3	1.1
Safe to eat				1	1	2	0.7
Smell					1	1	0.4
	270						

When respondents were asked to indicate how important various items were in their decision to purchase fresh fruit and vegetables, a total of sixteen variables were found to be equally important in influencing the respondents' decision to purchase from a retail store (Table 9.23).

Table 9.23: Importance of variables influencing respondents' criteria of preferred retail outlet

	Mean	SD
Freshness	5.77[a]	0.58
Cleanliness	5.66[a]	0.65
Good quality produce	5.64[a]	0.66
A wide range of fresh produce	5.51[a]	0.78
I can self select	5.45[a]	0.83
Value for money	5.44[a]	0.79
A wide range of other fresh products	5.41[a]	0.82
All product is clearly priced	5.37[a]	0.86
Competitive price	5.37[a]	0.88
Product easily accessible	5.30[a]	0.86
Product is clearly labelled	5.29[a]	0.89
Good customer service/friendly staff	5.25[a]	0.87
Quick/fast checkout	5.23[a]	0.99
Fresh produce is refrigerated	5.16[a]	1.02
A lot of sections (wet and dry sections)	5.14[a]	1.03
Everything all under one roof	5.14[a]	1.02
Well organised/well laid out	5.10[b]	0.95
Easy parking	5.08[b]	1.06
Offer special prices or discounts	5.06[b]	1.02
Near my house/work place	4.95[c]	1.03
Knowledgeable staff	4.90[c]	1.05
Trading hours	4.89[c]	1.08
Origin of the product is clearly displayed	4.84[d]	1.19
Attractive display/presentation	4.77[e]	1.08
Local produce	4.74[f]	1.15
Trolley and baskets are provided	4.72[g]	1.38
Loyalty/always shop there	4.67[g]	1.15
Opportunity to bargain on price	4.47[h]	1.41
Return/refund policy	4.37[i]	1.34
Sample of the product	4.35[i]	1.25
Air-conditioned	4.22[j]	1.51
Credit facilities	3.88[k]	1.56
Advertising on radio/tv/newspaper	3.74[l]	1.42
Cater for kids	3.63[m]	1.54
Shopping points/loyalty programs	3.46[n]	1.52

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

The sixteen variables were grouped under four themes; the physical attributes of the fresh fruit and vegetables (freshness, clean and good quality produce); convenience (a wide range of fresh produce, I can self select, a wide range of other fresh products, all product is clearly priced and labelled, product is easily accessible, a quick fast checkout, a lot of sections and everything under one roof); value (value for money and competitive price), and the characteristics of the retail outlet (good customer service/friendly staff and fresh produce is refrigerated).

Those variables which were of least importance to respondents when purchasing fresh fruit and vegetables were credit facilities, advertising in the print or electronic media, catering for the kids and shopping points/loyalty programs.

Principal component analysis revealed four factors which explained 64.6% of the variance observed in the respondents' decision to purchase fresh fruit and vegetables from a retail store (Table 9.24).

Table 9.24: Factors influencing respondents' criteria of preferred retail outlet

Variable	Factor			
	1	2	3	4
A wide range of fresh produce	0.846			
A wide range of other fresh produce	0.824			
Product is easily accessible	0.761			
All product is clearly priced	0.758			
Product is clearly labelled	0.726			
Good quality produce	0.717			
I can self select	0.703			
Advertising on radio/tv/newspaper		0.813		
Shopping points/loyalty programs		0.772		
Cater for kids		0.755		
Air-conditioned		0.714		
Return/refund policy		0.642		
Credit facilities		0.636		
Easy parking			0.767	
Everything all under one roof			0.721	
Near my house/work place			0.608	
Competitive price				0.778
Value for money				0.663
Opportunity to bargain on price				0.630
Eigenvalue	7.295	2.550	1.306	1.113
Percent variance	24.69	18.84	11.15	9.87
Cumulative variance	24.69	43.53	54.68	64.55
Cronbach's alpha	0.906	0.851	0.714	0.643
Factor mean	5.43[a]	3.88[c]	5.06[b]	5.09[b]

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 7.29, captured seven items and accounted for 24.7% of the variance. Collectively, these items were described as "perceived risks". In order to minimise risk, consumers preferred to select from a wide range of fresh produce, to have access to a wide range of other fresh produce and for the product to be easily accessible within their preferred retail outlet. Consumers also

wished to reduce the financial risk. This included product that was clearly priced and clearly labelled, the availability of good quality produce and the opportunity to self select the products. The Cronbach's alpha for this factor was 0.91, indicative of a very high reliability. In making the decision to purchase fresh fruit and vegetables from a retail outlet, this factor was ranked the most important criteria by respondents.

Factor Two captured six items and had an Eigenvalue of 2.55. The Cronbach's alpha for this factor was 0.85. The six items described the "attributes of modern retail outlets" which comprised several promotional items (advertising in the media, shopping points/loyalty programs), a comfortable shopping atmosphere for the whole family, and return and credit facilities in order to attract more consumers to shop there. This factor however, was the least important construct in the respondents' decision to buy fresh fruit and vegetables.

Factor Three, with an Eigenvalue of 1.31, had three items and accounted for 11.2% of the variance. The Cronbach's alpha for this factor was 0.71. Items in Factor Three described the "convenience factors" consumers search for when doing their shopping. It was comprised of items such as the accessibility of easy parking, the availability of most grocery products in the same shopping precinct, and the location of the retail outlet. Factor Three and Factor Four was considered equally important by respondents and were the second most important construct in making their decision to purchase fresh fruit and vegetables from a retail outlet.

Factor Four, with an Eigenvalue of 1.11 captured three items and accounted for 9.8% of the variance. The three items described the "value" which comprised competitive price, value for money, and the opportunity to bargain on price. The Cronbach's alpha for this factor was 0.64.

In thinking about the quality criteria respondents most often used in their decision to purchase fresh fruit and vegetables, freshness (93.2%) was the most frequently cited variable (Table 9.25).

Table 9.25: Variables respondents consider when they think about the quality of fresh fruit and vegetables

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	159	62	23	11	5	260	93.2
Price	29	33	25	15	12	114	40.9
Cleanliness	19	35	17	10	6	87	31.2
Nutrition	8	14	19	9	5	55	19.7
Freedom from chemicals	11	15	10	10	1	47	16.8
Safe to eat	2	8	16	12	4	42	15.1
Texture	12	11	8	8	3	42	15.1
Quality	10	10	6	3	5	34	12.2
Colour	8	12	6	1	6	33	11.8
Size/Shape	5	8	11	7		31	11.1
Taste	3	10	10	4	3	30	10.8
Nicely packed	2	6	7	6	8	29	10.4
Country-of-origin	3	6	9	3	1	22	7.9
Knowledgeable and friendly vendors	1	1	5	3	4	14	5.0
Freedom from pests	2	1	2	4	4	13	4.7
Halal	2	4	5	1		12	4.3
Smell	2	7	2	1		12	4.3
Organic		8	1		1	10	3.6
I can self select			4	4	1	9	3.2
Label		1	1	2		4	1.4
Location		1	2		1	4	1.4
Promotion			1	1	1	3	1.1
Product is refrigerated	1			1		2	0.7
Intended use		1			1	2	0.7
Easy parking				1		1	0.4
	279						

Price (40.9%) was the second most frequently cited variable, followed by cleanliness (31.2%). Quality of fresh produce were also associated with such variables as nutrition (19.7%), freedom from chemicals (16.8%), safe to eat (15.1%), and other variables which described the physical attributes of the product such as texture (15.1%), colour (11.8%), and size/shape (11.8%). Several respondents also mentioned quality (12.2%), taste (10.8%) and nicely packaged (10.4%) as variables which were indicative of the quality of fresh fruit and vegetables.

Halal (4.3%), smell (4.3%), organic (3.6%) and the opportunity to self select (3.2%) were among the most infrequently cited variables when respondents thought about the quality of fresh fruit and vegetables.

When asked to indicate the extent to which they agreed with sixteen quality statements associated with purchasing fresh fruit and vegetables from a retail store, seven variables were identified by respondents as having the highest measure of agreement (Table 9.26).

Table 9.26: The meaning of quality of fresh fruit and vegetables

Quality means that the product…	**Mean**	**SD**
is fresh	5.81[a]	0.53
is safe to eat	5.74[a]	0.62
is free from chemical residues	5.59[a]	0.77
is nutritious	5.57[a]	0.76
I will not be disappointed when I eat the product	5.47[a]	0.83
is good value for money	5.46[a]	0.83
is free from pests and diseases	5.46[a]	0.86
I will be able to use most if not all of the product I have purchased	5.36[b]	0.89
will taste good	5.35[b]	0.90
is free from dirt and soil	5.23[c]	0.94
has been produced in a way that is good for the environment	5.15[d]	1.00
will have a long shelf life	4.97[e]	1.08
was produced in a way that did not endanger the farmers	4.89[f]	1.19
looks attractive	4.75[g]	1.16
is attractively packaged	4.59[h]	1.18
will be more expensive	3.51[i]	1.44

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

For most respondents, good quality meant that the fruit and vegetables purchased were fresh, safe to eat, free from chemical residues, free from pests and diseases, nutritious, were good value for money and the respondent was unlikely to be disappointed with the purchase after consuming the product.

Attractive packaging and a high price were the two variables that were least often associated with quality.

Principal component analysis revealed three factors which collectively explained 68.6% of the variance (Table 9.27).

Table 9.27: Factors influencing quality of fresh fruit and vegetables

Quality means that the product…	Factor		
	1	**2**	**3**
is free from chemical residues	0.810		
is free from pests and diseases	0.809		
is safe to eat	0.722		
is nutritious	0.676		
I will not be disappointed when I eat the product		0.779	
is good value for money		0.771	
I will be able to use most if not all of the product I have purchased		0.721	
looks attractive			0.873
is attractively packaged			0.871
Eigenvalue	3.843	1.299	1.031
Percent variance	27.48	22.57	18.55
Cumulative variance	27.48	50.05	68.59
Cronbach's alpha	0.800	0.720	0.773
Factor mean	5.59[a]	5.43[a]	4.67[b]

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 3.84 captured four items and accounted for 27.5% of the variance. Items in Factor One described the "food safety issues" such as freedom from chemical residues, freedom from pests and diseases, safe to eat and nutritious. The Cronbach's alpha for this factor was 0.80. Not unexpectedly, this factor was the most influential in determining the respondents' perceptions of the quality of the fresh fruit and vegetables offered for sale.

Factor Two captured three items and had an Eigenvalue of 1.29. These three items described the "value for money" of the fresh produce purchased. The Cronbach's alpha for this factor was 0.72 and it explained 22.6% of the variance. Similar to Factor One, this factor was the most influential in determining the respondents' perceptions of the quality of the fresh fruit and vegetables they purchased.

Factor Three included two items that collectively captured the "utility of packaging". It accounted for 18.6% of the variance. The Cronbach's alpha for this factor was 0.77. Regardless of the benefits of packaging, this factor was the least influential when respondents considered the quality of the fresh fruit and vegetables available in a retail store.

Most respondents (81.9%) recognised that there was a difference in the quality of the fresh fruit and vegetables available from modern retail outlets and traditional markets (Table 9.28).

Table 9.28: Are there any difference in the quality of fresh fruit and vegetables

	N	%
Yes	231	81.9
No	51	18.1
	282	100.0

More than one half of the respondents (56.7%) believed that supermarkets and hypermarkets offered the best quality fresh fruit and vegetables (Table 9.29).

Table 9.29: Which retail outlets offer the best quality of fresh fruit and vegetables

	N	%
Modern retail outlets	160	56.7
Traditional markets	122	43.3
	282	100.0

The majority of respondents (78.5%) cited freshness as that variable which was best able to differentiate between the quality of the fresh fruit and vegetables offered by the traditional markets and the modern retail outlets (Table 9.30).

Price (25.2%) was the second most frequently cited variable that differentiated between the quality of the fresh produce offered by traditional and modern retail formats, followed by cleanliness (21.9%).

The display area (17.8%), knowledgeable and friendly vendors (17.0%), nicely packaged (17.0%), the variety (14.8%), texture (11.5%), and the fact that the fresh fruit and vegetables were refrigerated (11.1%) provided a third group of variables.

Table 9.30: Variables respondents consider that the quality of fresh fruit and vegetables is better from another retail outlet

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	123	51	20	10	8	212	78.5
Price	10	21	14	20	3	68	25.2
Cleanliness	19	25	7	4	4	59	21.9
Display area	14	13	14	5	2	48	17.8
Knowledgeable and friendly vendors	18	20	5	1	2	46	17.0
Nicely packed	16	16	8	5	1	46	17.0
Variety/a lot of choices	8	13	8	2	9	40	14.8
Texture	6	13	8	4		31	11.5
Fruit and vegetables are refrigerated	12	9	7	2		30	11.1
Comfortable environment	14	3	2	1	2	22	8.1
Country-of-origin	3	11	4	1	1	20	7.4
Freedom from chemicals/preservative	4	3	9	3	1	20	7.4
Quality	8	1	3	2	1	15	5.6
I can self select	3	3	3	4		13	4.8
Label	1	5	5	2		13	4.8
Colour	6	3	2	1		12	4.4
Safe to eat	1		3	3	3	10	3.7
Taste	1	5	2	1		9	3.3
Freedom from pest and diseases	1		3	2	1	7	2.6
Organic		1	1		1	3	1.1
Size		1			2	3	1.1
Nutrition			1	1	1	3	1.1
I can also buy other products here	1				1	2	0.7
Smell				1	1	2	0.7
Quantity	1	1				2	0.7
Easy parking		1				1	0.4
Promotion			1			1	0.4
Trading hours		1				1	0.4
	270						

Other variables considered by respondents which enabled them to differentiate between the quality of the fresh fruit and vegetables offered by different retail stores included a comfortable environment (8.1%), country-of-origin (7.4%) and freedom from chemicals and preservatives (7.4%).

Respondents were then asked to indicate the extent to which they agreed with 21 statements about their preferred choice of retail outlet when purchasing fresh fruit and vegetables. On a scale of 1 to 6, where 1 was “I disagree a lot” and 6 was “I

agree a lot", five variables were afforded similar measures of agreement (Table 9.31).

Table 9.31: Respondents level of agreement/disagreement with each of these statements

	Mean	SD
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.19[a]	0.99
Products in the supermarkets are clearly priced	5.02[a]	0.89
Consumers can bargain on price in wet markets	4.97[a]	1.14
Fresh produce is displayed better in supermarkets	4.79[a]	1.02
Supermarkets operate everyday while traditional markets operate only on certain days of the week	4.68[a]	1.35
The children feel comfortable when I shop at supermarkets	4.53[b]	1.30
Supermarkets offer a wider range of fresh food	4.53[b]	1.26
Retailers in the traditional market are more knowledgeable about the products they sell	4.42[b]	1.21
Supermarkets offer better customer service than the traditional markets	4.32[c]	1.18
I prefer to buy my fresh fruit and vegetables from the same vendor in the traditional markets	4.29[c]	1.34
Traditional markets offer better quality produce at a much cheaper price	4.28[c]	1.29
Fruit and vegetables are fresher in traditional markets	4.28[c]	1.22
I cannot buy the other household items I need if I shop at traditional markets	4.26[c]	1.32
The quality of the fresh produce available is better in supermarkets	4.25[c]	1.24
Traditional markets seldom have a good or clean environment	4.23[c]	1.27
I buy my other household goods from supermarkets but I buy my fruit and vegetables from traditional markets	4.05[d]	1.38
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	3.88[e]	1.30
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.69[f]	1.31
I go to supermarkets because of the shopping points I get	3.59[g]	1.57
At traditional markets, the vendors remember my name	3.51[g]	1.58
I often meet my friends when I shop at traditional markets	3.29[h]	1.36

where 1 is "I disagree a lot" and 6 is "I agree a lot"

those items with the same superscript are not significantly different at p = 0.05

Those variables which were the most highly rated described the perceived risks (products are clearly priced, fresh produce is better displayed, and trading hours), the convenience associated with shopping at a modern retail outlet, and the ability to bargain on price in traditional markets.

In order to group respondents according to their preferred choice of retail store when purchasing fresh fruit and vegetables, cluster analysis was again applied (Table 9.32). On this occasion, a three cluster solution was considered to be optimal.

Table 9.32: Respondents level of agreement/disagreement with each of these statements according to cluster

	Cluster 1		Cluster 2		Cluster 3	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
The quality of the fresh produce available is better in supermarkets	5.35[a]	0.93	4.02[b]	0.99	3.80[b]	1.23
Supermarkets operate everyday while traditional markets operate only on certain days of the week	5.47[a]	0.74	4.21[b]	1.31	4.64[b]	1.47
Consumers can bargain on price in wet markets	5.26[a]	0.85	4.24[b]	1.23	5.42[a]	0.90
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	5.84[a]	0.37	4.92[b]	1.01	5.06[b]	1.04
I often meet my friends when I shop at traditional markets	2.97[b]	1.28	2.65[b]	1.19	4.05[a]	1.23
Supermarkets offer a wider range of fresh food	5.65[a]	0.55	4.03[b]	0.92	4.29[b]	1.44
At traditional markets, the vendors remember my name	3.31[b]	1.53	2.47[c]	1.22	4.54[a]	1.19
I cannot buy the other household items I need if I shop at traditional markets	4.81[a]	1.34	3.68[b]	1.29	4.46[a]	1.19
I go to supermarkets because of the shopping points I get	4.56[a]	1.35	2.84[c]	1.34	3.69[b]	1.53
The children feel comfortable when I shop at supermarkets	5.42[a]	0.95	4.11[b]	1.21	4.34[b]	1.37
Traditional markets seldom have a good or clean environment	5.03[a]	1.19	3.74[b]	1.05	4.17[b]	1.29
Supermarkets offer better customer service than the traditional markets	5.16[a]	0.87	3.76[c]	0.99	4.29[b]	1.21
I can return easily goods if I'm not satisfied when I buy them from traditional markets	3.27[b]	1.45	3.03[b]	0.95	4.41[a]	1.11
I buy my other household goods from supermarkets but I buy my fruit and vegetables from traditional markets	3.00[c]	1.32	3.56[b]	1.05	4.99[a]	0.97
Traditional markets offer better quality produce at a much cheaper price	3.53[b]	1.35	3.77[b]	1.06	5.13[a]	0.92
I can return easily goods that I'm not satisfied with after purchasing it from supermarkets	4.32[a]	1.45	3.31[b]	1.13	4.14[a]	1.22

Fresh produce is displayed better in supermarkets	5.47[a]	0.67	4.17[c]	0.93	4.93[b]	0.97
Fruit and vegetables are fresher in traditional markets	3.37[c]	1.15	3.82[b]	0.93	5.19[a]	0.85
I prefer to buy my fresh fruit and vegetables from the same vendor in the traditional markets	3.39[b]	1.35	3.61[b]	1.04	5.34[a]	0.74
Products in the supermarkets is clearly priced	5.55[a]	0.64	4.69[b]	0.97	4.97[b]	0.79
Retailers in the traditional market are more knowledgeable about the products they sell	3.99[b]	1.29	3.78[b]	0.98	5.13[a]	0.93

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

Cluster 1 described "modern retail shoppers". This group had a higher mean score on convenience. They most valued the diversity of the fresh food available in supermarkets, the products being clearly priced, the importance of extended trading hours and the provision of a comfortable environment for children.

Cluster 2 described "transient shoppers". Shoppers in this group were found not to be loyal to any retail outlet. They did not demonstrate any preference for a specific retail store at which to purchase these products suggesting that they would buy from whichever store was the most convenient whenever they needed to purchase fresh fruit and vegetables. The mean scores for this group were generally found to be in the mid-point of the scale.

Cluster 3 described "traditional market shoppers". This group scored highly on the opportunity to bargain on price and loyalty to the same vendor each time they purchased fresh fruit and vegetables. They believed that purchasing from a traditional market represented much better value, as good quality fresh produce was offered at a much lower price. Furthermore, retailers in the traditional markets were more knowledgeable about the products they sold.

To verify the findings, a cross-tabulation was undertaken to examine any relationship between the clusters and the place of purchase.

Respondents from Cluster 1 purchased most of their fresh fruit and vegetables from supermarkets (38.0%) and hypermarkets (36.9%) (Table 9.33).

Table 9.33: Place of purchase by cluster

	Cluster 1		Cluster 2		Cluster 3		Total
	n	%	n	%	n	%	
Supermarket	19	38.0	20	40.0	11	22.0	50
Hypermarket	27	36.9	28	38.4	18	24.7	73
Wet market/Fresh market	8	14.8	13	24.1	33	61.1	54
Farmers market	2	12.5	3	18.8	11	68.8	16
Night market	5	10.9	16	34.8	25	54.3	46
Wholesale market	0	0.0	8	66.7	4	33.3	12
Grocery store/mini-market	1	7.7	7	53.8	5	38.5	13
Total	62		95		107		264

[Pearson chi-square =48.01, df =12, p = 0.000]

Cluster 2 involved a mix of respondents who purchased from both the modern retail outlets and traditional markets. Some 66.7% of respondents in Cluster 2 purchased the majority of the fresh fruit and vegetables they consumed from the wholesale market, 53.8% from the grocery store/mini-market, 40.0% from supermarkets and 38.4% from hypermarkets.

Respondents in Cluster 3 favoured the traditional markets as 68.8% of respondents purchased the majority of the fresh produce they consumed from farmers market, 61.1% from wet market/fresh market and 54.3% from the night market.

Further confirmation was achieved when a cross-tabulation was used to differentiate the variables which best described the quality of the fresh fruit and vegetables purchased according to the premises from which shoppers purchased the majority of their fresh fruit and vegetables (Table 9.34).

While freshness was the most frequently cited variable for all three clusters, it was the most influential for Cluster 3 (97.2%). Similarly, price (31.8%) and knowledgeable and friendly variables (36.4%) were more frequently cited.

For Cluster 1, cleanliness (35.5%), nicely packed (29.0%), the display area (25.8%), the variety of choice (22.6%) and fruit and vegetables that were refrigerated (20.9%) were clearly indicative of those shoppers who preferred to purchase fresh fruit and vegetables from modern retail outlets. Additionally, variables such as labels (9.7%), safe to eat (9.7%) and organic (3.2%) were other indicators which

encouraged shoppers to purchase their fresh fruit and vegetables from either a supermarket or hypermarket.

Table 9.34: Clusters by which variables respondents consider to differentiate the quality of fresh fruit and vegetables is better from another retail outlet

	Cluster 1 (62)		Cluster 2 (95)		Cluster 3 (107)	
	N	%	N	%	N	%
Freshness	48	77.4	50	52.6	104	97.2
Price	14	22.6	19	20.0	34	31.8
Cleanliness	22	35.5	24	25.3	9	8.4
Display area	16	25.8	12	12.6	20	18.7
Knowledgeable and friendly vendors	3	4.8	1	1.1	39	36.4
Nicely packed	18	29.0	15	15.8	10	9.3
Variety/a lot of choices	14	22.6	10	10.5	12	11.2
Texture	11	17.7	5	5.3	12	11.2
Fruit and vegetables are refrigerated	13	20.9	14	14.7	1	0.9
Comfortable environment	9	14.5	10	10.5	2	1.9
Country-of-origin	1	1.6	5	5.3	11	10.3
Freedom from chemicals/preservative	2	3.2	2	2.1	15	14.0
Quality	4	6.5	4	4.2	5	4.7
I can self select	3	4.8	4	4.2	4	3.7
Label	6	9.7	4	4.2	3	2.8
Colour	2	3.2	5	5.3	3	2.8
Safe to eat	6	9.7	2	2.1	1	0.9
Taste	1	1.6	3	3.2	4	3.7
Freedom from pests and diseases	1	1.6	1	1.1	4	3.7
Organic	2	3.2	1	1.1	0	0.0
Size	2	3.2	0	0.0	1	0.9
Nutrition	1	1.6	0	0.0	2	1.9
I can also buy other products here	0	0.0	2	2.1	0	0.0
Smell	1	1.6	0	0.0	1	0.9
Quantity	0	0.0	0	0.0	2	1.9
Easy parking	0	0.0	1	1.1	0	0.0
Promotion	1	1.6	0	0.0	0	0.0
Trading hours	0	0.0	1	1.1	0	0.0

Among the most frequently cited variables which differentiate the quality of the fresh fruit and vegetables available from a retail outlet, respondents in Cluster 2 considered freshness (52.6%), cleanliness (25.3%) and price (20.0%). Given that they do not have any preferred place of purchase, respondents in Cluster 2 may go to any retail outlet when they need to purchase fresh fruit and vegetables.

Analysis of variance was performed to investigate the relationship between the factors influencing the respondents' choice of preferred retail outlet and the clusters (Table 9.35). Results indicate that there were significant differences for Factor One and Factor Four.

Table 9.35: Results of principal component analysis (criteria of preferred retail outlet) by cluster

	Cluster 1		Cluster 2		Cluster 3	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Factor 1:Perceived risk	5.65[a]	0.48	5.03[b]	0.81	5.59[a]	0.44
Factor 2:Modern retail outlet	4.32[a]	0.97	3.44[b]	1.11	3.93[a]	1.11
Factor 3:Convenience	5.27[a]	0.75	4.81[b]	0.91	5.11[a]	0.76
Factor 4:Value	5.13[a]	0.77	4.73[b]	0.88	5.39[a]	0.58

Factor One was found to be significantly more important for modern retail and traditional market shoppers. Both shoppers perceived that their preferred retail outlet could offer better quality fresh fruit and vegetables with minimal risks involved.

Factor Four was also found to be equally important for modern retail and traditional market shoppers. Both clusters perceived that their preferred retail outlets could offer the best value when purchasing fresh fruit and vegetables.

Subsequently, another analysis of variance was performed to investigate the relationship between the factors influencing the quality of fresh fruit and vegetables and the clusters (Table 9.36). Results indicate that there were significant differences for Factor One and Factor Two.

Table 9.36: Results of principal component analysis (quality of fresh fruit and vegetables) by cluster

	Cluster 1		Cluster 2		Cluster 3	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Factor 1: Food safety issues	5.71[a]	0.51	5.36[b]	0.71	5.67[a]	0.53
Factor 2: Value for money	5.59[a]	0.53	5.17[b]	0.79	5.54[a]	0.61
Factor 3: Utility of packaging	5.06[a]	1.05	4.31[b]	1.01	4.77[a]	0.92

Factor One was found to be significantly more important for modern retail and traditional market shoppers. Respondents belonging to Cluster 1 and Cluster 3

perceived that their preferred retail outlet could offer better quality fresh produce which was free from chemical residues, free from pests and diseases, nutritious and thus, safe to eat.

Factor Two was also found to be significantly more important for modern retail and traditional market shoppers. Respondents in both clusters perceived that the purchase of fresh fruit and vegetables from their preferred retail outlet represented good value for money.

In a similar manner to the fresh meat survey, the socio-demographic variables were tested against the clusters. The results were found not to be significantly different by cluster.

9.4 Part Three: Synthesis

The findings indicated that there were differences between respondents preferred place of purchase for fresh/chilled meat and fresh fruit and vegetables. A total of 66.4% of respondents were reported to choose the traditional markets whereas only 53.5% preferred to purchase fresh fruit and vegetables from the traditional market. This suggests that Malaysian consumers prefer to purchase their fresh/chilled meat from traditional markets.

Glitsch (2000) revealed how consumers in countries such as Germany, Ireland, Italy and Spain prefer to purchase their fresh meat (beef, pork and chicken) from traditional butchers. Similarly, the majority of grocery shoppers in Taiwan continue to visit the traditional markets to purchase fresh meat (Hsu and Chang 2002). Conversely, in the UK and Sweden, megamarts, hypermarkets or supermarkets account for the majority of retail meat sales (Glitsch 2000).

In Australia, McKinna et al. (2007) reported that 51.0% of Australians purchase their fresh vegetables from supermarkets on a weekly basis. However, on several occasions, they purchase additional fruit and vegetables from fresh markets or fruit shops when required. Similarly in Malaysia, respondents who purchase their fresh fruit and vegetables from modern retail outlets may also purchase some fresh

produce from other retail outlets. This occurs because respondents want to utilise and cook produce that is fresh and the variety of fresh produce available from retail outlets may differ from time to time.

Nevertheless, the place of purchase could be linked to car ownership. According to Kari and Rasiah (2008), the Klang Valley has the highest rate of urban growth and car ownership compared to other regions in Malaysia. Car ownership in the Klang Valley has increased from 546 vehicles per 1,000 persons in 1996 to 994 vehicles per 1,000 persons in 2002 (Malaysia 2004). It was confirmed by Rahman (1995) that on average, there will be more than one car in every household in Kuala Lumpur by 2000. As a result of this, consumers in the Klang Valley are more mobile, which gives them the opportunity to shop around for the best quality and the best value food.

In terms of the frequency of purchase, some 66.2% of the respondents purchased fresh/chilled meat at least one time per week compared to 68.7% of respondents from the fresh fruit and vegetables survey. Without stating the obvious, this suggests that the majority of respondents shop for food one time per week. However, that does not preclude them nor does it stop them from topping up where they either run out or have an unanticipated need. In part, the frequency with which respondents purchase fresh food could be related to refrigerator ownership. According to Mahlia et al. (2004), almost every household in Malaysia has a refrigerator-freezer. Leng et al. (2002) noted that refrigerator ownership had increased from 48.1% in 1992-1996 to 79.8% in 1997-2000. It was estimated by Saidur et al. (2007) that more than 6,935,000 Malaysians have a refrigerator-freezer at home and by 2013, the number will have increased to 8,395,000. Refrigerators are increasingly being considered as a household necessity to keep perishable food fresh particularly in a country with hot and humid weather such as Malaysia (Leng et al. 2002). A high penetration of refrigerator ownership, decreases the number of shopping trips to purchase food. Veeck and Veeck (2000) confirm that refrigerator ownership was associated with the frequency of food shopping in China.

In making their decision to purchase fresh/chilled meat and fresh fruit and vegetables from their preferred retail outlet, freshness and price were the two most frequently cited variables used by respondents (Table 9.37).

Table 9.37: Variables respondents consider in their decision to purchase fresh food from their most preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (85.2%)	Freshness (83.3%)
Price (69.6%)	Price (73.7%)
Cleanliness (54.0%)	Variety/a lot of choices (27.0%)
Halal (39.2%)	Quality (25.6%)
Variety/a lot of choices (25.2%)	Cleanliness (23.3%)

For the purchase of fresh meat, freshness was perceived differently according to the place of purchase. Goldman and Hino (2005) described the freshness of the meat available from the traditional markets as “warm” (just recently being killed) and not chilled or frozen. Hsu and Chang (2002) explained freshness by the manner in which meat was being presented for sale in the traditional markets. Consumers were given the opportunity to touch the meat to determine its freshness. Conversely, the meat available in most modern retail outlets is pre-cut and pre-packaged, and displayed in chillers or freezers (Hsu and Chang 2002; Krystallis et al. 2007). Umberger et al. (2003) added that the freshness of the meat purchased from supermarkets was determined by the label attached to the product. According to Bonne and Verbeke (2006), the label can provide information such as the slaughter date, the date the meat was processed and the origin of the meat. In the absence of a label, consumers may be assisted by their preferred butcher in determining the freshness of the meat (Becker et al. 2000).

Goldman et al. (1999) demonstrated that fresh fruit and vegetables, and other fresh food items such as meat and fish were perceived to be fresher and cheaper in most traditional markets in Hong Kong than those purchased in supermarkets. The findings of this study were supported by Berdegue et al. (2005), who demonstrated that the price of fresh fruit and vegetables in modern retail outlets were 15.0% to 60.0% above traditional retailers. Although the price of several meat cuts were found to be cheaper in the traditional markets, Hsu and Chang (2002) believed that shoppers who patronise traditional retailers may not be totally driven by lower

prices. According to Humphrey (2007), modern retailers lose out to traditional retailers because of the consumers' perceptions of both freshness and the lower price of fresh meat, fruit and vegetables.

Cleanliness was one of the other most frequently cited variables reported by respondents as influencing their decision to purchase fresh food. Cleanliness was seen as presenting a significant barrier for traditional retail outlets to compete with modern retailers. Generally, most traditional markets are described as wet, dirty and smelly, over-crowded, poorly ventilated and often inhabited by vermin (Goldman et al. 1999; Muharam 2001; Hsu and Chang 2002; Bougoure and Lee 2009). Cleanliness was important for most Central American consumers. Apparently, they assumed that the fresh fruit and vegetables being offered in a clean and tidy supermarket were safer to eat compared to the fresh produce available from a dirty and disorganised market (Berdegue et al. 2005). However, Suryadarma et al. (2010) revealed how cleanliness was seen to be one of the least important variables for traditional retailers in Indonesia to attract more shoppers. *Pasar Tani Mega* or Mega-Agri marts were introduced by the Malaysian Ministry of Agriculture and Agro-Based Industry in an effort to replace traditional markets with more modern facilities that offered a more hygienic and conducive environment for shoppers (Muda n.d.). According to Ibrahim (2009), vendors must operate a clean and neat stall and be appropriately attired. Not only has this attracted more locals, but foreign tourists have also been found to be visiting these markets. Despite the unpleasant conditions, the findings of this study reveal that many consumers will continue to purchase their fresh food from traditional markets.

Variety was another variable cited by respondents in their decision to purchase fresh food from a retail store. This finding concurs with Baltas and Papastathopoulou (2003), which revealed how the variety of merchandise determined store patronage. Modern retail outlets have an advantage in offering their shoppers not only a wider range of fresh food, but also processed, dry and packaged food (Reardon et al. 2003). Besides doing their grocery shopping, shoppers who visit modern supermarkets and hypermarkets can also shop for clothes and other non-food products. Dholakia (1999) explained how consumers enjoy the satisfaction of going shopping in modern supermarkets because they have

more choice. At the same time, consumers can experience the diversity of fresh food products and other products when visiting the traditional markets. In Hong Kong, the smaller wet markets have at least 30 stalls, whereas the larger markets may contain more than 400 (Goldman et al. 1999). Consumers can chose from a wide range of fresh fruit and vegetables, dried and preserved foods, fish and seafood, meat and poultry, and other cooked food. Similarly in Malaysia, the *Pasar Tani Mega*, offer consumers a variety of choice including products such as fresh chicken and beef, fish, prawns, crabs, potted plants and flowers, toys, clothes, health products like traditional herbs, frozen food, traditional cakes and ready-to-eat meals (*Pasar Tani Mega* n.d.).

Halal was among the most frequently cited variables by respondents when purchasing fresh/chilled meat. However, this variable was seldom cited when respondents spoke about purchasing fresh fruit and vegetables. In relation to food, Halal foods are permissible for consumption under Islamic dietary regulations (Che Man and Selamat 2005). Halal is most commonly associated with the consumption of meat and the manner in which the animal has been slaughtered. This has an immediate impact on whether it is both safe to eat and permissible to eat. As fresh fruit and vegetables are generally Halal, this may explain why Halal was seldom cited by respondents in their decision to purchase fresh fruit and vegetables.

In order to narrow the gap by competing with vendors from traditional markets, modern retailers tend to emphasise the quality of the fresh fruit and vegetables offered (Berdegue et al. 2005). Fresh fruit and vegetable products supplied to modern retail chains must often meet private standards which specify the quality, safety, volume and packaging (Reardon and Berdegue 2002). van der Pol and Ryan (1996) found that quality was an important attribute in influencing the consumption of fresh fruit and vegetables among consumers in the UK.

Given that quality is a qualitative attribute, researchers often experience difficulties in understanding how consumers evaluate the quality of the fresh fruit and vegetables purchased. According to Berdegue et al. (2005), quality is assessed by the consistent appearance of the fruit and vegetables in terms of size, shape, colour, firmness and ripeness. Quality was also judged by factors such as freshness,

seasonality, appearance and nutritional value (van der Pol and Ryan 1996). van der Pol and Ryan (1996) have also demonstrated how quality was associated with consumers desire to purchase fresh fruit and vegetables from supermarkets. This finding may reflect consumers' perceptions that the fresh fruit and vegetables from the corner shop are of lower quality. Given that their market share for fresh fruit and vegetables has eroded, traditional vendors in Brazil and Argentina have started to improve the quality of the fresh produce they offer for sale in order to meet the competition from supermarkets (Reardon and Berdegue 2002). Wet market traders in Chile and Malaysia were also reported to have improved the quality of the fresh produce offered for sale by upgrading the markets' facilities, improving procurement practices and adopting more hygienic practices (Reardon et al. 2005).

Apart from the top five variables most frequently cited by respondents, the location of the retail store was another variable which was found to influence the respondents' decision to purchase fresh food. Cadilhon et al. (2006) revealed that consumers in Vietnam cited the proximity of the shop and time saving, rather than emphasising freshness and price. Arnold et al. (1997) and Kim and Jin (2001) [cited in Baltas and Papastathopoulou (2003)] reported that location was the most important attribute in choosing a store. However, this criteria alone cannot explain store choice adequately (Bell et al. 1998). The impact of store choice must be analysed through fixed cost (store location) and variable cost (price and promotion), which can be further explained by analysing the concept of the basket size. For example, if a consumer shops for a large basket, he or she will prefer to visit a store with a higher fixed cost and a lower variable cost. In other words, consumers are expected to travel further in order to purchase goods at a much cheaper price. Handy and Clifton (2001) demonstrated that proximity to home was not the most important factor influencing store choice. Other factors such as the quality of products, pleasant atmosphere, wide selection and fewer crowds were equally important. However, consumers often relate store location to the concept of convenience, where some are willing to pay more because it is more convenient. In this study, respondents perceived convenience as meaning a comfortable shopping atmosphere and easy access to the store.

Loyalty to the same vendor was another frequently cited variable which influenced the respondents' decision to purchase fresh/chilled meat. This indicated that respondents valued friendly, trusted and knowledgeable vendors who provided assistance in making their decision to purchase fresh/chilled meat in traditional markets. Trust was perceived from a variety of dimensions. Muslim consumers have shown their desire to purchase fresh/chilled meat from Malay butchers in traditional markets. When purchasing from a trusted source, consumers become aware of the origin of the meat and most importantly that the meat was guaranteed Halal. This finding concurs with previous qualitative findings which demonstrate how consumers from a certain ethnicity or religion, preferred to purchase meat from vendors belonging to the same ethnicity or religion. Additionally, vendors are perceived as experts, where consumers relied on them to provide safe and high quality products (Figuie et al. 2006). Consumers who were unaware of the different cuts or portions of meats could refer to vendors who were more knowledgeable in their area. Similar to Taiwan (Hsu and Chang 2002), vendors within traditional markets in Malaysia provide personalised service for customers who required services such as chopping, slicing, skinning, de-boning and packing. Suryadarma et al. (2010) revealed that 40.0% of traditional retailers cited politeness as the main attribute of their business success. In addition, more consumer-friendly services such as giving priority to frequent customers, giving discounts, being honest, providing home delivery services and the availability to pay in instalments were employed as strategies by traditional retailers in Indonesia to become more competitive in the retail food market.

Although the service quality provided by traditional retailers was perceived as a positive approach to attract shoppers and to increase competitiveness, Bougoure and Lee (2009) demonstrated how traditional traders in Hong Kong were not providing the level of service quality demanded by consumers. In the absence of professional training, personalised service by vendors in traditional markets was unprofessional. Moreover, in the wet markets, consumers indicated that vendors did not always display personal warmth, were unfriendly and unpleasant, and did not invest the time to get to know their customers. On the other hand, training programs for employees in supermarkets were provided to ensure staff were professional, friendly, approachable and polite when dealing with consumers. Supermarkets also

outperformed wet markets in terms of responsiveness to consumers. With the advanced information technology available in most modern retail outlets, staff were able to respond promptly to consumers' requests. Having limited resources was seen as a disadvantage for traditional retailers.

Nevertheless, in Malaysia, the service quality provided by vendors in most traditional markets is seldom attainable in most modern retail stores.

Somewhat surprisingly, food safety issues such as freedom from chemicals, pests and diseases were among the most infrequently cited variables considered by respondents in their choice of retail store. A result such as this indicates that most respondents in the Klang Valley believe that the fresh food they purchase is safe to eat irrespective of the retail outlet from which the food is purchased. Given that the Malaysian government food control measures have become much stronger, the level of food safety in Malaysia is relatively better than some other ASEAN countries (Stringent steps to ensure food is safe to eat 2008). Additionally, various government agencies are working together to administer and regulate food safety along the food chain. For example, the Malaysian Ministry of Agriculture and Agro-Based Industry is responsible for monitoring the usage of pesticides, encouraging the adoption of good farming practices, and the control of food-animal disease and hygienic practices in abattoirs and farms. The Malaysian Ministry of Health ensures food safety at the processing and retail level. The Malaysian Department of Veterinary Services is responsible for the control of imported meat, poultry, eggs and milk, whereas the Malaysian Department of Agriculture is in control of the importation of fresh fruit and vegetables. According to Arshad et al. (2006), although the technology implemented in agri-food supply chains in Malaysia is not as good as many developed countries, several changes are being implemented to meet consumers' demand for high quality and safe products.

A total of sixteen variables were identified as being of equal importance in the respondents' decision to purchase fresh food from their preferred retail outlet. The variables were grouped according to theme; the physical attributes of the product (freshness, clean and good quality produce); convenience (a wide range of fresh produce, I can self select, all product is clearly priced and labelled, a wide range of

other fresh products, product is easily accessible, a quick fast checkout, a lot of sections and everything under one roof); value (value for money and competitive price), and the characteristics of the retail outlet (fresh produce is refrigerated and good customer service/friendly staff). Although the products vary greatly, in purchasing fresh/chilled meat and fresh fruit and vegetables, respondents demonstrated that similar criteria were utilised in their choice of preferred retail outlet.

Principal component analysis identified four constructs which were considered most influential in the respondents' decision to purchase fresh fruit and vegetables in a retail store. When purchasing fresh/chilled meat, an additional construct emerged which described the quality of the product (Table 9.38).

Table 9.38: Factors influencing respondents' criteria of preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Quality	Perceived risk
Perceived risk and Convenience	Convenience and value
Price	Attributes of modern retail outlets
Characteristics of a modern retail outlet	

Quality was ranked as the most important construct by respondents in their decision to purchase fresh/chilled meat from their preferred retail outlet. Quality was further explained by variables such as good quality produce, freshness and cleanliness. Similar to Wandel and Bugge (1997), Becker et al. (2000), Glitch (2000), Grunert et al. (2004) and Jabbar and Admassu (2009), freshness was among the most important attributes signifying the quality of meat. Other attributes which described the quality of fresh meat were grouped under search quality attributes (colour, price, origin) and experiential quality attributes (taste, tenderness, juiciness, healthiness and nutrition). In this study, many of these attributes were grouped under different themes or emerged as factors on their own right.

Respondents considered the concept of cleanliness to represent the quality of meat. Jabbar and Admassu (2009) revealed how cleanliness was measured by the hygiene of staff/butchers and premises. Their study demonstrated how respondents from higher income groups were more sensitive to cleanliness and perceived that better

quality meat was sold from shops that were cleaner, where staff wore clean clothes and used clean equipment to process the meat. Cleanliness of the equipment to process the meat, washing the meat using clean water and the adoption of hygienic practices by butchers can improve the microbiological quality of meat (Rao and Ramesh 1988). Consumers in Ethiopia preferred to purchase their fresh meat in supermarkets compared to traditional butchers because of the different level of cleanliness between the retail outlets (Jabbar and Admassu 2009).

As for the purchase of fresh fruit and vegetables, respondents ranked perceived risk as the most significant construct influencing their preferred choice of retail outlet. A total of seven criteria (a wide range of fresh produce, a wide range of other fresh produce, product is easily accessible, all product is clearly priced, product is clearly labelled, good quality produce and the ability to self select) described how consumers attempt to minimise the risks involved with the purchase of fresh fruit and vegetables. According to Akpinar et al. (2009), given that fresh fruit and vegetables are perishable, consumers want to purchase them in a healthy and hygienic condition, and to consume them before they perish and loose their nutritional value. Pollard et al. (2002) mentioned the importance of the availability of fresh produce within shops (a wide range of fresh produce and other fresh produce) and the physical effort required to obtain the food (product is easily accessible). Consumers preferred to visit shops which held a wide range of fresh produce. Given that fruit and vegetables are heavy and bulky, consumers needed to consider accessibility to get to and from their preferred retail outlet.

In this study, consumers were found to prefer products that were clearly priced and labelled to reduce the perceived risks that might occur when purchasing fresh fruit and vegetables from a retail outlet. Given that Malaysia imports fresh fruit and vegetables from countries such as China, India, Thailand, Australia, and the USA (Rahim 2007), Malaysian consumers valued the information provided on the label. In order to determine the quality of the produce purchased from a retail outlet, respondents from this study preferred to self-select their fresh fruit and vegetables. This finding concurs with Batt (2004), who found that Australian consumers prefer to self-select their fruit from retail shelves. Damaged, rotten or bruised fruit was

often found in pre-packed fruit and vegetables. This is one of the risks consumers try to reduce in purchasing fresh fruit and vegetables from a retail store.

Consumers in Croatia ranked five criteria according to their importance when purchasing fresh fruit and vegetables; freshness, quality, bio-production, domestic origin and product information (Kovacic et al. 2002). However, when these consumers were segmented according to clusters and their preferred place of purchase, the importance of these variables was found to vary. Practical buyers, who preferred to purchase their fresh fruit and vegetables from modern retail outlets, considered the importance of variety, product appearance, presentation and price. Traditional buyers and city market fans, who purchased most of their fresh produce from markets, valued the importance of freshness, quality and domestically grown produce. City market fans also considered the market as a place to meet friends and acquaintances. According to Pollard et al. (2002), food choice behaviour differs from person to person when purchasing fresh fruit and vegetables. Each person has their own set of criteria according to priorities, which may also include the place of purchase.

For respondents purchasing fresh/chilled meat, the perceived risk and convenience were second equal. Perceived risk was comprised of seven item measures (product easily accessible, product is clearly labelled, quick fast checkout, local produce, origin of the product is clearly displayed, trading hours and loyalty). However, only two criteria (product is easily accessible and clearly labelled) were similar to the purchase of fresh fruit and vegetables. According to McCarthy and Henson (2005), previous research about risk related with meat products has focused on consumers' perceptions of the importance of food safety and health. However, it was suggested that there were other risks associated with the purchase of beef, such as the financial risk (wasting money because the product did not meet the customers' expectations), social risk (class status when the consumer seeks to prepare the meat to impress only to find that expectations are not fulfilled), and psychological risk (where the product fails to meet taste expectations). In this study, perceived risk also involved fast checkout, local produce, origin, trading hours and loyalty.

According to Verbeke and Vackier (2004), meat is considered a high involvement product in the food product category, which requires consumers to access enough information about the product and to evaluate the product attributes carefully before purchase. To reduce the perceived risk in purchasing fresh/chilled meat from a retail outlet, quality assurance (labelling) and a long-term personal relationship with the butcher are common approaches. Yeung and Yee (2003) demonstrated how personal information from experts (butchers) or friends reduced the perceived risk associated with the purchase of poultry meat. Concerned meat consumers have shown their greatest concern over food safety (Verbeke and Vackier 2004). Although eating less meat, they purchased meat from their preferred butchers because of personal assurances and their perception that it was better quality meat. Irish consumers were found to be more confident when they purchased fresh beef from their preferred butcher as the meat was fresher, of higher quality and the service provided by butchers was better than supermarkets, which led to a reduction in the level of perceived risk (McCarthy and Henson 2005).

In this study, the origin of the meat (either locally or imported meat) was also considered as a criteria to reduce risk associated with the purchase of the meat. Purchase location was found to be the most important risk mitigation strategy, followed by the colour of the meat and country-of-origin (McCarthy and Henson 2005). In Sweden, consumers valued the importance of country-of-origin due to their desire to support their local beef industry (Hoffmann 2000). Swedish consumers were more aware of the process standards in their local beef industry, which considered the importance of animal welfare and food safety aspects. In Malaysia, the importance of country-of-origin may reflect consumers concerns about the Halal status of the meat.

Convenience was the second most important criteria influencing respondents' decision to purchase both fresh/chilled meat and fresh fruit and vegetables from a retail store. All three variables (everything all under one roof, near my house/work place and easy parking) were similar for both types of fresh food. Grunert (2006) described the concept of convenience in terms of time and money, and the preference for convenience food. When time was scarce and consumers experienced stress in their daily lives, Bonne and Verbeke (2006) described convenience as one-

stop-shopping. In Belgium, younger consumers dislike the idea of going to the butcher to purchase meat, and then going to the bakery to purchase bread. Most consumers preferred to shop from supermarkets where they could purchase everything they needed under one roof.

The proximity of the place of purchase was also described as convenience. Zenk et al. (2005) found a positive association between proximity to a retail outlet and the purchase of fresh fruit and vegetables. Having a supermarket near to the consumers' home, facilitated the purchase of fresh produce. Berdegue et al. (2005) found that some consumers were willing to pay a higher price to purchase their fresh produce in supermarkets rather than traditional retailers because of convenience. Similarly, although vegetables were perceived to be more expensive in supermarkets, McKinna et al. (2007) reported that Australian consumers went to supermarkets because of the ability to do a complete shop with convenient parking.

Value, which consisted of competitive price, value for money and the opportunity to bargain on price, was ranked the second equal most important construct in respondents' decision to purchase fresh fruit and vegetables. Consumers who were price responsive often compared the prices of fresh fruit and vegetables from both supermarkets and traditional retail outlets (McKinna et al. 2007). According to Pollard et al. (2002), price was reported to be more influential in consumers' food choice for lower socioeconomic groups. However, McKinna et al. (2007) described how value for money does not necessarily mean a lower price. Consumers evaluate value for money by weighing the performance of the product (quality and enjoyment) against price. The ability to bargain on price was important for many Malaysian consumers. Zinkhan et al. (1999) explained how bargaining is a cultural value which occurs in most markets in Brazil. This cultural tradition differentiates consumers' purchasing experience in the traditional markets from other modern retail outlets.

Price was ranked as the third most important construct by respondents in their decision to purchase fresh/chilled meat. For unbranded products such as meat, price is often used by consumers as an indicator of information when other information about the product is not available (Bernues et al. 2003; Bredahl 2004). Given that

66.0% of respondents purchased the majority of their fresh/chilled meat from traditional markets, price was indicated by the ability of the consumers to bargain on price. Maruyama and Trung (2007) described bargaining as the 'art of shopping' and found that in Vietnam, consumers who wanted to bargain were more likely to shop in traditional outlets (traditional bazaars and mom and pop stores). While consumers could be attracted by the lower price offered by supermarkets, factors such as quality and loyalty to the same butcher were considered more influential.

A total of five criteria (air-conditioned, advertising on radio/tv/newspaper, catering for kids, credit facilities and shopping points/loyalty programs) described the characteristics of a modern retail outlet for both fresh/chilled meat and fresh fruit and vegetables. However, the characteristics of a modern retail outlet were ranked as the least important criteria respondents considered in their decision to purchase both fresh/chilled meat and fresh fruit and vegetables from a retail outlet. This suggests that respondents considered other criteria as being more influential in their decision to purchase fresh food from a retail outlet.

When thinking about the quality of fresh/chilled meat and fresh fruit and vegetables, freshness was the most frequently cited variable respondents considered (Table 9.39).

Table 9.39: Variables respondents consider when they think about the quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (82.8%)	Freshness (93.2%)
Halal (57.6%)	Price (40.9%)
Cleanliness (43.6%)	Cleanliness (31.2%)

Halal, cleanliness and price were among the other variables most frequently cited by respondents when thinking about the quality of the fresh/chilled meat purchased. In purchasing fresh fruit and vegetables, price and cleanliness were the second and third most frequently cited variables by respondents. Halal was not a consideration in determining the quality of fresh fruit and vegetables.

With regards to the quality of fresh food, seven variables were afforded the highest measure of agreement (Table 9.40).

Table 9.40: The meaning of quality of fresh food

Quality means that the product …	
Fresh/chilled meat	**Fresh fruit and vegetables**
is fresh. is safe to eat. is guaranteed Halal. is nutritious. is free from chemical residues. is free from pests and disease. I will not be disappointed when I eat the product. is free from antibiotics/growth promotants. will taste good. I will be able to use most if not all of the product I have purchased. is good value for money.	is fresh. is safe to eat. is free from chemical residues. is nutritious. I will not be disappointed when I eat the product. is good value for money. is free from pests and disease.

The quality of both fresh/chilled meat and fresh fruit and vegetables revolved around freshness, food safety (safe to eat, free from chemical residues, free from pests and disease), nutrition and value (will not be disappointed when eating the product and good value for money). Wandel and Bugge (1997) similarly identified the multi faceted nature of food quality to include such variables as taste, freshness, appearance, nutritional value and food safety. Grunert et al. (2004) considered the consumers' perceptions of food quality to include sensory attributes, food safety, health and nutritional value.

Although value is most often explained by the relationship between quality and price (Zeithaml 1998 [cited in Grunert 2005]) and the minimisation of waste (Kennedy et al. 2004), the concept of value in the literature is often analysed in a different way. Using means-end theory, Grunert (2005) tries to understand the personal value to the consumer of happiness/well-being and the family's quality of life. Grunert (2005) believes that by understanding the concept of value, marketers are able to add more value to the product according to what the consumers want.

Respondents also considered several additional criteria which were perceived to influence the quality of fresh/chilled meat; Halal guaranteed, free from

antibiotics/growth promotants, good taste and the ability to use most of the product purchased. This would suggest that respondents believed that the purchase of fresh/chilled meat required more thought and effort, compared to the purchase of fresh fruit and vegetables. As the price of fresh/chilled meat is generally more expensive per kg than fresh fruit and vegetables, consumers' involvement with the purchase of fresh/chilled meat will be higher. Consumers are expected to gather more information and to be more involved in the decision to purchase to avoid making the wrong choice (Verbeke 2005a).

Principal component analysis identified three constructs which collectively captured the respondents' perceptions of the quality of both fresh/chilled meat and fresh fruit and vegetables (Table 9.41).

Table 9.41: Factors influencing quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Safe Meat production Utility	Food safety issues and value for money Utility of packaging

Similar results have indicated that the quality of fresh food was most often related to the safety of the product. For fresh/chilled meat, safe was determined by the freshness of the product. In Hoffmann (2000), food safety was assessed by the country-of-origin and the freshness of the meat. Cowan (1998), and Henson and Northern (2000) [cited in Bernues et al. (2003)] reported that freshness was the main cue in determining the safety of meat in six European countries. For fresh fruit and vegetables, safe indicates that the product is free from chemical residues, pests and diseases, and is also nutritious. The presence of chemical residues has become a major health concern for consumers in their purchase of fresh fruit and vegetables (Henneberry et al. 1999). Given that Malaysia is a major importer of many types of fresh produce from China, India, Indonesia and Thailand, as reported by Calvin et al. (2006), Chinese farmers are among the world's highest users of chemical fertilisers and pesticides, many of which are banned in the United States.

Respondents also indicated that the safety of the fresh fruit and vegetables they purchased was determined by the absence of any pests and diseases. Molnar (1995)

suggested that the presence of pathogens and parasites in food may be hazardous. To support the findings by Molnar (1995), Torjusen et al. (2001) revealed that food such as organics, which has not been genetically modified and does not contain any harmful substances, were considered among the most important criteria after freshness and taste.

Nutritious food was also a signal that the food was safe to eat (Caswell and Mojduszka 1996; Rico et al. 2007). However, Caswell and Mojduszka (1996) indicated that in many cases, food quality and the safety of the food cannot be determined by the nutritional value of the label on the food. While the label may describe the food, if the food is contaminated, this may result in illness, and thus, the nutritional level of the food is not an accurate indicator of the quality of the food.

An additional construct (value for money) was afforded similar measures of agreement as food safety in indicating the quality of the fresh fruit and vegetables purchased by respondents. Value for money was further described by three variables; (1) will not be disappointed when eating the food (what consumers want in a product), (2) good value for money (cost), and (3) the ability to use most of the product (no wastage). Similarly, Campbell et al. (2009) demonstrated that consumers were concerned about the value (reducing the wastage and money spent) of the fruit they had purchased. As fresh fruit deteriorates, many consumers do not simply discard undesirable fruit. Among the approaches to maximise the value of the fruit purchased, consumers may: (1) remove the “bad” bits and consume the remainder of the fruit, (2) find an alternative use for the fruit such as baking and stewing, or (3) increase the frequency of shopping to optimise the freshness of the fruit.

Sabbe et al. (2009) explained value for money in terms of price, which has raised two different arguments. Firstly, there are consumers who are prepared to pay a premium price, given that the fruits were bought for the taste and indulging character. Nevertheless, Sabbe et al. (2009) also found that consumers do not want to pay a high price and to be disappointed (expectations are often not confirmed). Both Campbell et al. (2009) and Sabbe et al. (2009) agreed that the opportunity to

taste the fruit prior to purchase will add value to the consumers' decision to purchase.

In comparison to fresh/chilled meat, although previous discussions have indicated that consumers emphasised value more in making their purchase to purchase fresh/chilled meat, value for money did not appear among the factors influencing the quality of fresh/chilled meat.

Respondents ranked meat production (production will not cause danger to farmers, environment and animals) as the second most highly rated factor associated with the quality of fresh/chilled meat. According to Caswell and Mojduszka (1996), food quality is determined by a number of characteristics, including food safety, nutrition and value, as well as the production process (animal welfare and environmental impact). Over the last 10 to 15 years, consumers in most European countries have become interested in the way food products are produced (Grunert et al. 2004). According to Wandel and Bugge (1997), phrases such as environmentally sound production and animal welfare are beginning to be included in the discussions of food quality. As a result of this, it was anticipated that consumers will begin to choose between competing products on the basis of production processes or some other ethical considerations that determine if the food is of better quality. In parallel, researchers question whether consumers will be willing to pay an additional price premium to secure these additional attributes. From this research, it is evident that Malaysian consumers are becoming more concerned about how their meat was produced, but their willingness to pay is yet to be ascertained.

Results indicate that the utility of packaging (looks attractive, attractively packaged, and longer shelf life) was the factor least considered by respondents when thinking about the quality of both fresh/chilled meat and fresh fruit and vegetables. Bernues et al. (2003) similarly concluded that packaging was less important to European consumers when purchasing meat products. Pre-packaged meat fulfils the demand of consumers who are more convenience oriented (Bernues et al. 2003; Resurreccion 2003). Resurreccion (2003) demonstrated how young European consumers evaluated the quality of the food they purchased by considering the nutritional value, the production system, and the packaging of the food. These

consumers were searching for information about the product through the brand or label attached to those products that had been pre-packaged. However, purchasing meat which has been pre-packaged may not be readily accepted by all consumers. As indicated by Bernues et al. (2003), older consumers are more accustomed to purchasing unpackaged and unbranded meat.

Respondents perceived that there were considerable differences between the quality of the fresh food available from modern retail outlets and the traditional markets (Table 9.42).

A higher percentage of respondents (62.2%) agreed that traditional markets offered the best quality fresh/chilled meat compared to modern retail stores. It was believed that the guarantee of Halal and more knowledgeable vendors were more influential in indicating that the quality of fresh/chilled meat was better in the traditional market. This finding corresponds with Goldman et al. (1999) who identified that attributes such as slaughtering the animal according to religious beliefs can be better handled by traditional retailers.

Table 9.42: The difference in the quality of fresh food between modern retail outlets and traditional markets

		Fresh/chilled meat		Fresh fruit and vegetable	
		N	**%**	**N**	**%**
Do you perceive any differences in the quality of [fresh/chilled meat/fresh fruit and vegetables] between modern retail outlets and traditional markets?	Yes	222	87.1	231	81.9
	No	33	12.9	51	18.1
Total		259	100.0	282	100.0
Which of the two retail outlets offer the best quality of [fresh/chilled meat/fresh fruit and vegetables]?	Modern retail outlets	98	37.8	160	56.7
	Traditional markets	161	62.2	122	43.3
Total		259	100.0	282	100.0

Freshness, cleanliness and price were the three most frequently cited variables considered by respondents in determining which retail outlet offered the best quality fresh food (Table 9.43).

Table 9.43: Variables respondents consider that the quality of fresh food is better from another retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (97.9%%)	Freshness (78.5%)
Cleanliness (38.7%)	Price (25.2%)
Halal (29.4%)	Cleanliness (21.9%)
Price (21.4)	Display area (17.8%)

Not unexpectedly, the concept of Halal was an additional variable which influenced respondents' perceptions as to where they could purchase the best quality fresh/chilled meat. This result concurs with both Bonne and Verbeke (2008b) and Talib et al. (2008), who show how Halal is an additional quality attribute in a predominantly Muslim country. Moreover, Ahmed (2008) revealed how the need to purchase Halal meat is emerging in the UK, even although the Muslim population is a minority.

In purchasing fresh fruit and vegetables, the display area emerged as another variable respondents considered in making their decision as to which retail outlet provided the best quality fresh fruit and vegetables. Uetrecht et al. (1999) found that displaying fresh produce attractively could influence consumers in their decision to purchase from a retail store. Fearne and Hughes (1999) reported a 50.0% increase in the sales of fresh produce in supermarkets by: (1) shifting the fresh produce department from the back of the store to the front and (2) doubling its shelf area. According to Bachmann and Earles (2000), temperature management is the single most important factor in preserving the quality of fresh produce after harvest. Refrigerated storage will retard the rate at which fresh produce deteriorates with aging, moisture loss, wilting, spoilage due to invasion by bacteria, fungi and yeast, and sprouting. In Malaysia, the refrigerated storage and display of fresh fruit and vegetable products is most often found in modern retail outlets. Kader (2001) and Liu et al. (2006) demonstrated that good refrigerated display units are mostly offered by supermarkets. Somewhat surprisingly, for the purchase of fresh/chilled meat, a chilled/frozen storage unit was cited by only 14.0% of respondents.

Cluster analysis identified two clusters of respondents who purchased the majority of the fresh/chilled meat they consumed in their household from either modern

retail stores (modern retail shoppers) or the traditional market (traditional market shoppers) (Table 9.44).

Table 9.44: Cluster of respondents by the place of purchase

Fresh/chilled meat		Fresh fruit and vegetables		
Modern retail shoppers	Traditional market shoppers	Modern retail shoppers	Transient shoppers	Traditional market shoppers

However, with regard to the purchase of fresh fruit and vegetables, cluster analysis identified three clusters of respondents who were described as modern retail shoppers, transient shoppers or traditional market shoppers. Transient shoppers do not demonstrate any preference for a particular retail store when purchasing fresh fruit and vegetables. Given that the purchase of fresh produce is often seen as a routine task, these shoppers will visit which ever retail store is perceived to be the most convenient for them at that time.

Although the clusters were labelled using similar terms, several similarities and differences were identified in the respective clusters for each fresh food item.

Modern retail shoppers for both fresh/chilled meat and fresh produce valued the convenience factors and the enjoyment of shopping from modern retail stores due to the availability of a wider range of fresh food, products that were clearly priced and displayed better. Linking the concept of convenience with supermarkets were mentioned in Farhangmehr et al. (2001), Shamsudin and Selamat (2005), Abu and Roslin (2008) and Ahmed (2008). Given that supermarkets and hypermarkets are able to offer many products to customers, this type of retail store is preferred due to its convenience (time) and practicality (Farhangmehr et al. 2001). Shamsudin and Selamat (2005) believe that the aspect of convenience and the provision of a comfortable shopping environment are among the competitive advantages modern retail outlets offer their shoppers. Ahmed (2008) found that the motive for consumers to shop at supermarkets such as Tesco was because everything was under one roof. Abu and Roslin (2008) described grocery shopping as a family outing for many Malaysians. For this reason, Malaysian consumers do their grocery

in modern retail stores, so that, at the same time, they can dine with the whole family, or accomplish other activities.

In terms of the ability of modern retail outlets to offer a wider range of food, Shamsudin and Selamat (2005) found that many Malaysian shoppers prefer to purchase their food products from supermarkets and hypermarkets because of the wide range of food from domestic and imported sources. Furthermore, shoppers who visit modern retail outlets are able to purchase a greater variety of processed food products (Hsu and Chang 2002).

Better product presentation may also attract shoppers to purchase their fresh food from supermarkets and hypermarkets. Bougoure and Lee (2009) found that consumers in Hong Kong described supermarkets as being superior to wet markets in their tangible offerings, which included how products were presented.

With regard to the purchase of fresh fruit and vegetables, respondents emphasised the benefits of visiting modern retail outlets, given that supermarkets and hypermarkets have longer operating hours compared to traditional markets. In Hong Kong for example, Bougoure and Lee (2009) indicated that the opening hours of most wet markets are governed by the government, which some describe as customer unfriendly, given that the trading hours do not cater to the needs of all consumers. Although extended trading hours are preferred by consumers, such may appeal only to a certain segment of consumers. Richbell and Kite (2007) revealed that younger and working shoppers benefit the most from extended shopping hours.

In the traditional market, for both fresh/chilled meat and fresh produce, both groups of shoppers were loyal to the same vendors each time they purchased fresh food from the traditional market. In purchasing fresh/chilled meat, in ensuring that the meat was safe and Halal, especially for a Muslim consumer, Grunert et al. (2004) found that consumers prefer to entrust their purchase to a butcher who is an expert in their field. In addition to this, the personalised services offered by the butcher such as cleaning the chicken or cutting the meat according to the consumers' preferences, encourage loyalty. Farhangmehr et al. (2001) demonstrated the linkage

between loyalty and store patronage, describing it as a relationship between the consumer and an entity (service or vendor).

As a result of having a good relationship with the vendors, shoppers were able to bargain on price. One common variable (the opportunity to bargain on price) was found supportive of traditional retail outlets in the respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. Maruyama and Trung (2007) found that in Vietnam, a consumer who wants to bargain would be more likely to shop at traditional markets instead of going to supermarkets. Lui (2008) found that consumers who prefer to shop at wet markets in Hong Kong mentioned that through bargaining, they managed to: (1) pay less than the actual price of the product (paying only $10 if the goods cost $11), and (2) receive additional products at no cost upon purchasing. Traditional retailers demonstrated that through bargaining, compromises could be made as long as it did not result in a huge loss from the transaction and it had symbolic value in reinforcing the tie between consumers and the retailer (Lui 2008). Bargaining involves flexibility, which is impossible in supermarkets, for the price is normally fixed. Bargaining requires skills, given that the better the shopper is at bargaining, the cheaper the price will become (Maruyama and Trung 2007; Huong n.d.). However, not all shoppers have good bargaining skills when purchasing food products. Maruyama and Trung (2007) found that the ability to bargain was related to the gender of the shopper. Given that men do not like bargaining as much as women shoppers, males are more likely to shop from supermarkets. In a similar study, Huong (n.d.) found that supermarkets had attracted more male shoppers because these shoppers can avoid bargaining. Maruyama and Trung (2007) suggest that shoppers who do most of their shopping from supermarkets do not consider bargaining to be useful. For them, obtaining products at a much cheaper price is less important in their decision to purchase. When shopping at a modern retail store, they search for superior products which are safer and better quality.

Traditional market shoppers for fresh/chilled meat believed that the fresh/chilled meat was fresher in the traditional markets. As a result, they would purposely visit the traditional market to purchase their fresh/chilled meat, even although they purchased other household products from supermarkets or hypermarkets. Goldman

et al. (1999), Goldman (2000) and Mai and Zhao (2004) report that shoppers often split their food purchases according to food items. Traditional markets were still the preferred place to purchase fresh food items, while modern retail outlets were the place to purchase other dry, frozen and pre-packaged food items. Furthermore, increasing numbers of shoppers are purchasing non-food items from modern retail outlets. In China, shoppers visit the supermarkets to purchase only selected products, but continue to purchase fresh meat, fish, fruit and vegetables from traditional markets (Mai and Zhao 2004).

Studies by Bernues et al. (2003), Verbeke and Vackier (2004) and McCarthy and Henson (2005) grouped respondents according to their level of involvement in purchasing fresh meat. In this study however, respondents were classified according to their store choice preferences when purchasing fresh food from a retail store. By way of comparison, the characteristics of modern retail shoppers for fresh/chilled meat were found to be different from the modern retail shoppers for fresh fruit and vegetables (Table 9.45).

Table 9.45: Factors influencing respondents' criteria of preferred retail outlet by cluster

Fresh/chilled meat survey		**Fresh fruit and vegetables survey**	
Modern retail shoppers	**Traditional market shoppers**	**Modern retail shoppers**	**Traditional market shoppers**
Characteristics of a modern retail outlet	Price	Perceived risk	Perceived risk
Convenience		Value	Value

Modern retail shoppers for fresh/chilled meat were found to emphasise the importance of a modern retail outlet (air-conditioned, advertising in print and/or electronic media, catering for the kids, the availability of trolleys and baskets, credit facilities and loyalty programs) and convenience (all under one roof, proximity to house/office and easy parking) when purchasing fresh/chilled meat. These shoppers dislike purchasing their fresh/chilled meat from a retail store which is hot, stuffy and unsuitable for children. However, modern retail shoppers for fresh fruit and vegetables perceived that supermarkets and hypermarkets could offer fresh produce with minimal risks (a wide range of fresh produce and other fresh produce, products that were easily accessible, clearly priced and labelled, good quality which they

could self-select) together with greater value (competitive price and value for money).

Although the differences identified by those shoppers who preferred to purchase their fresh food from a modern retail outlet were product specific, the discussion revolved around a good environment and facilities, convenience and value, which most modern retail outlets are able to offer to their shoppers. Devlin et al. (2003) found that a store environment which caters for children, makes food shopping an uncomplicated task (clear signage and labelling products), and was clean and tidy, was preferred by shoppers. Devlin et al. (2003) also discussed the importance of incorporating as many time saving features (easy access and parking facilities) as the store could afford.

Traditional market shoppers for fresh fruit and vegetables had similar characteristic to modern retail shoppers, highlighting the importance of perceived risk and value. Although the items which described perceived risk and value were similar, both types of shoppers have very different perceptions of the retail store at which they prefer to shop. According to Mitchell (1998), in relating perceived risk with store choice, any retailer who can offer their shoppers low-risk products will have a significant competitive advantage. Additionally, Mitchell (1998) suggests that the characteristics of shoppers vary due to their different approaches in reducing the risk and their tolerance to the different types of loss when purchasing fresh products. The range of fresh produce and other fresh food, and the accessibility of the product in-store were related to physical and time risks. Mitchell (1998) described that any physical or mental effort saved in the shopping trip or by the products purchased will help reduce physical risk, whereas time risk relates to the amount of time required to purchase the product. When associating these items with store choice, the literature suggests that it is still debatable as to which retail outlet offers the widest range of fresh produce for their consumers. Goldman et al. (2002); Reardon and Berdegue (2002); Hendrickson et al. (2006); Liese et al. (2007) and Figuie and Moustier (2009) found that the types of fresh fruit and vegetables available varied between the different types of retail stores. In terms of the ease of access while shopping, Pettigrew et al. (2005) and Liese et al. (2007) mentioned that products were generally more accessible in supermarkets.

Value, which is mainly about the cost of purchase, was also among the factors which most influence respondents in deciding which retail outlet to choose when purchasing fresh fruit and vegetables. Pollard et al. (2002), Liese et al. (2007) and Tam (n.d.) disagree on which retail outlet offers the best price for fresh produce. Given that the price of fruit and vegetables was found to be an influential criteria for consumers, Pollard et al. (2002) and Cassady et al. (2007) found that price was also a barrier for those from the lower socio-economic groups. Traditional market shoppers in the fresh/chilled meat survey revealed the importance of price (the opportunity to bargain) as a factor which encouraged them to purchase from traditional retailers compared to traditional market shoppers in the fresh produce survey.

The relationship between store attributes and the characteristics of different shoppers have been analysed by Mai and Zhao (2004), Shamsudin and Selamat (2005) and Maruyama and Trung (2007). In China, Mai and Zhao (2004) found that income had a significant influence on the place from which respondents purchased food. Malaysians shoppers, who were between the ages of 20 to 40 years old and lived in urban areas, placed more importance on convenience and preferred to shop from modern retail outlets (Shamsudin and Selamat 2005). Maruyama and Trung (2007) found that young shoppers were more often attracted by a good shopping environment, good product quality and time-saving aspects when food shopping. This study however was unable to find any significant differences between the socio-demographic characteristics of the sample and store attributes. Similarly, Goldman and Hino (2005) demonstrated that socio-demographic variables did not impact on the choice of retail store for the purchase of food products. According to Goldman and Hino (2005), shoppers were not restricted in their choice of retail store by socio-demographic measures.

9.5 Part Four: Review

Changes are happening within the retail food sector in both the developed and developing regions. Several push and pull factors have influenced the emergence of modern retail formats across the globe. These factors were identified as:

a) limited opportunities for supermarkets to expand in their domestic markets (Kamath and Godin 2001; Wong 2007)
b) strong economic growth in regions such as Latin America, Asia and Africa (Glover 1999, Goldman et al. 2002; Reardon and Berdegue 2002)
c) rapid growth in personal disposable income (Glover 1999; Reardon and Berdegue 2002; Shamsudin and Selamat 2005; Shepherd 2005)
d) increasing urbanisation (Geuens et al. 2003; Shepherd 2005), and
e) increasing concerns about food safety among consumers (Shamsudin and Selamat 2005; Shepherd and Galvez 2007; Wong 2007).

Consequently, modern retail formats are gradually replacing the role of traditional retail markets, providing consumers with more choice on where and when to shop.

In Malaysia, the first supermarket was introduced in 1964 in Kuala Lumpur (Othman 1990). During its early years of operation, it was reported that the customers were mainly expatriates and upper income people. As a result of changing lifestyles, modern consumers in Malaysia prefer to shop at supermarkets and hypermarkets for they provide greater convenience, comfort, cleanliness and quality (Glover 1999).

From the findings of this research, it is possible to conclude that only 28.5% of the population in the Klang Valley can be classified as committed buyers of fresh/chilled meat and fresh produce from supermarkets. According to Othman (1990), the consumers' choice of retail outlet was highly dependent on the category of household items. Fresh food was mainly purchased from wet markets, dry goods from grocery stores, while other products such as toiletries and canned/frozen food was most often purchased from modern retail outlets. Results from this study demonstrated that most Malaysians in the Klang Valley (66.4%) prefer to purchase their fresh/chilled meat from traditional markets.

Consumers' level of involvement is much higher for the purchase of fresh/chilled meat compared to fresh fruit and vegetables. According to McCarthy and O'Reilly (1999), meat is a product that poses a higher level of risk to consumers, either financially, as it is perceived to be more expensive than fresh fruit and vegetables,

and from a food safety perspective. However, the risk can be lessened depending on the type and amount of information provided.

Information on the Halal status of the fresh/chilled meat available in a retail store is required by most consumers in Malaysia. This is due to the fact that the majority of consumers are Muslim.

In the absence of any legitimate third party certification, personal trust developed between customers and vendors is important in determining the Halal status of fresh/chilled meat. This finding was similar to previous research by Bonne and Verbeke (2006) and Wan Omar et al. (2008). Trust is highly associated with the place of purchase for meat products, as most Muslims prefer to purchase fresh/chilled meat from an Islamic butcher who operates in a traditional market. Consumers place much value on being served by butchers of the same ethnic race and religion (Goldman and Hino 2005; Bonne and Verbeke 2006).

However, with the emergence of modern retailing and the growing importance of private brands, another source of information is the product label. Fresh/chilled meat that is guaranteed Halal carries a Halal food certificate and label. Halal food certification refers to an examination of the processes undertaken in the preparation, slaughtering, cleaning, processing, handling, disinfecting, storing, transporting and the management of the food product (Wan Omar et al. 2008). In Malaysia, the Department of Islamic Development Malaysia (JAKIM) is the main organisation which provides Halal certification and is the main source of information for consumers regarding the Halal status. Most local fresh/chilled meat available from modern retailers carries the Halal logo produced by JAKIM, while imported meat carries their own Halal logo. Despite the advantages the logo has to offer, due to a lack of confidence, consumers prefer to purchase their fresh/chilled meat from trusted butchers in the traditional market. The credibility of the information and the personalised service provided by traditional vendors outweigh the institutionalised quality system for Halal fresh/chilled meat in Malaysia.

With regards to the purchase of fresh produce, more than one half of the respondents purchased their fresh fruit and vegetables from traditional markets.

However, the variation between respondents who purchased their fresh produce from traditional markets and modern retail stores were found to be relatively small. Freshness, competitive price, variety and convenience were found to be the major factors attracting consumers to purchase their fresh fruit and vegetables from both retail outlets (Table 9.46).

Table 9.46: Factors attracting consumers to purchase fresh fruit and vegetables supplies from modern retail outlets and traditional markets

Factors attracting consumers	Modern retail outlets	Traditional markets
Freshness	√	√
Variety	√	√
Competitive price	√	√
Convenience	√	√

Both retail outlets are perceived to have the advantage of offering fresh produce. Those consumers who visit the modern retail outlets relate freshness to the use of refrigerated display units. Other consumers who purchase their fresh fruit and vegetables from traditional retail outlets perceive that refrigerated products have been stored for a longer period, while fresh fruit and vegetables in the traditional markets are considered fresh and 'natural'(Faiguenbaum et al. 2002).

Modern retail outlets have the advantage of offering a wide variety of food and non-food items. In Malaysia, organically grown fruit and vegetables are generally available from most modern retail stores. Previous research however has revealed that many modern retail formats are less capable of handling fresh fruit and vegetables, as their main focus is on offering packaged and processed food (Goldman et al. 1999; Faiguenbaum et al. 2002). Therefore, many modern retail outlets are only capable of offering a limited range of fresh produce, which may not meet the consumers needs (Digal and Concepcion 2004 [cited in Shepherd 2005]).

The purchase of fresh/chilled meat and the purchase of fresh fruit and vegetables may be associated. When consumers purchase their fresh/chilled meat from traditional markets, at the same time, they may also purchase their fresh fruit and vegetables.

There is still much debate as to which retail store offers the lowest price for fresh food. Past research reveals that the price of food is much lower in supermarkets (Alwitt and Donley 1997; Aylott and Mitchell 1999; Chung and Meyers 1999). However, in order to compete with modern retail stores, traditional market vendors must not only maintain the quality of their fresh food, but ensure their prices are competitive (Tam n.d. and Faiguenbaum et al. 2002). In this study, differences in the price of fresh produce between retail stores was not investigated.

Convenience was cited by respondents as one of the most influential factors in their decision to purchase fresh fruit and vegetables from either retail format. The concept of convenience saves time and reduces stress for consumers when doing their shopping (Mitchell and Kiral 1998; Pride et al 2004). Convenience was also described by many attributes such as the location of the store, opening hours, one stop shopping, ease of movement, spaciousness, fast checkouts, store atmosphere, store attractiveness, and helpful staff (Mitchell and Kiral 1998). For modern retail shoppers, convenience for them was described as good store atmosphere, good customer service and good layout. For traditional market shoppers, they refer to convenience as the location of the store, which is close to where they work or live.

Traditional markets are still the preferred place to purchase fresh/chilled meat and fresh fruit and vegetables. Nevertheless, with higher education and increasing income, consumers are now demanding better quality, safe and healthy food. With consumers changing their lifestyle and store choice preferences, the shift is towards modern retail outlets and inevitably, traditional market vendors will struggle to survive in the market. However, factors such as the personalised service and the assurance of Halal were identified as competitive advantages for traditional retailers.

10. A description of the respondents' purchase of fresh/chilled meat

10.1 Chapter outline

This chapter reports on the respondents' purchase of fresh/chilled meat. Part One describes the purchasing pattern for fresh/chilled chicken. Part Two provides an insight into respondents' behaviour in their decision to purchase fresh/chilled beef.

Part Three identifies how respondents deal with their dissatisfaction with the quality of fresh/chilled meat after purchase. This section will also discuss the level of confidence respondents possess with regard to: (i) the safety of fresh/chilled meat consumed; and (ii) the methods employed by the Malaysian government to manage food safety and quality assurance systems with regards to chemical residues, sustainable production, microbial contamination and animal welfare. Part Four discusses the similarities and differences in the respondents' decision to purchase fresh/chilled chicken and beef from a retail outlet.

10.2 Part One: The purchase of fresh/chilled chicken

The majority of respondents interviewed (63.9%) purchased fresh/chilled chicken at least one time per week (Table 10.1).

Table 10.1: Frequency of purchasing fresh/chilled chicken

	N	%
Everyday	2	0.8
2 – 3 times per week	34	13.3
Once a week	127	49.8
Once every two weeks	65	25.5
Once a month	17	6.7
Others	10	3.9
	255	100.0

Some 25.5% of respondents purchased fresh/chilled chicken one time every two weeks. The remaining respondents purchased fresh/chilled chicken only one time per month (6.7%), or during festive seasons (3.9%).

Most respondents chose to purchase whole dressed chicken (77.1%) rather than proportions (Table 10.2).

Table 10.2: Forms respondents most often purchase fresh/chilled chicken (%)

	Mean	SD
Whole dressed chicken	77.1	30.6
Chicken portions	25.6	25.5
Chicken drumsticks	21.0	20.0
Chicken breast	20.0	16.6
Fillets skin on	18.5	29.5
Chicken ribs/keel	16.7	14.5
Fillets skin off	15.8	12.2
Chicken wings	14.6	10.0
Chicken thigh	14.1	9.6
Chicken cubes	12.8	13.9
Chicken center	11.3	7.6
Chicken feet	8.2	4.62
Chicken minced	7.8	5.4
Chicken gizzard	7.2	5.6
Chicken liver	7.1	4.6
Chicken bishop	6.2	5.1

The other portions most often purchased by respondents were chicken drumsticks (21.0%) and breast (20.0%). Portions such as gizzard (7.2%), liver (7.1%) and bishop (6.2%) were rarely purchased by the respondents.

The most popular method respondents used to cook chicken was by frying (92.2%). (Table 10.3). More than one half of the respondents (59.8%) used chicken to make soup. Other respondents used chicken in their red curry (36.7%), green curry (26.6%), or to roast and grill the chicken (33.6%).

Chicken was also utilised as an additional flavouring in dishes such as fried rice or fried noodles (17.9%). In the traditional Malaysian cuisine, chicken was used in preparing *sambal* (15.2%), *kurma* (8.9%), *rendang* (8.2%) and *tom yam* (6.3%).

Table 10.3: Methods how respondents cook chicken

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Fried	138	49	28	15	6	236	92.2
Soup	48	64	21	9	11	153	59.8
Red curry	14	31	32	14	3	94	36.7
Roasted/Grilled	12	12	21	22	19	86	33.6
Green curry	5	21	25	10	7	68	26.6
Additional flavouring	7	7	16	8	8	46	17.9
Sambal	2	12	10	9	6	39	15.2
Boiled	4	18	10	2	2	36	14.1
Soy sauce	2	4	11	8	3	28	10.9
Kurma			7	10	6	23	8.9
Tomato	1	4	5	8	4	22	8.6
Steam	4	7	2	5	3	21	8.2
Rendang	3	4	5	5	4	21	8.2
Tom yam		3	5	6	2	16	6.3
Braised	4	5	4	2		15	5.9
Any other dishes	8	1		1	1	11	4.3
BBQ		2	3	1	2	8	3.1
Stew	1	2	2			5	1.9
Paprik	1		1	1	1	4	1.6
Ginger	1				3	4	1.6
Porridge		1	1	1		3	1.2
Honey		1	1			2	0.8
Asam pedas				1	1	2	0.8
Black pepper	1			1		2	0.8
	256						

In making their decision to purchase fresh/chilled chicken, irrespective of the place of purchase, freshness (82.1%) was the most frequently cited variable (Table 10.4). Other variables most frequently cited included Halal (58.2%), cleanliness (55.8%) and price (47.0%). The concept of cleanliness was further described as the cleanliness of the retail outlet, including the display unit where the chicken meat was being stored and presented for purchase. The ability to bargain, particularly in the traditional markets, was considered under price.

Table 10.4: Variables respondents consider in their decision to purchase fresh/chilled chicken

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	82	86	21	11	6	206	82.1
Halal	103	10	21	10	2	146	58.2
Clean environment	16	42	45	26	11	140	55.8
Price	17	28	34	19	20	118	47.0
Variety/a lot of choices/many different parts available	4	14	13	7	9	47	18.7
Size/weight	8	10	9	8	6	41	16.3
Odourless	1	13	11	7	5	37	14.7
Skin colour	2	10	14	7	3	36	14.3
Quality	3	6	7	6	3	25	9.9
Friendly and knowledgeable vendors	3	4	4	9	4	24	9.6
Texture - Solid/not flaccid	5	3	3	5	3	19	7.6
Freedom from diseases		1	4	4	3	12	4.8
Freedom from chemicals/growth promotants		1	1	5	2	9	3.6
Nicely packed		1	3	1	1	6	2.4
Leanness			1	1	4	6	2.4
Location – near my house/office	2		1	2	1	6	2.4
Label/brand	1	2			3	6	2.4
Type of chicken	1	1	1	1	1	5	1.9
Local	2	1		1	1	5	1.9
Organic	1			2	1	4	1.6
Origin			3	1		4	1.6
Type of shop				2	1	3	1.2
Parking		2	1			3	1.2
Frozen/chilled storage		1	1			2	0.8
Intended use				1	1	2	0.8
Taste		1				1	0.4
Other products available from the shop				1		1	0.4
	251						

Other variables respondents considered in their decision to purchase fresh/chilled chicken were the variety of choice of the many different parts or portions (18.7%), the size or the weight of the chicken (16.3%), odour (14.7%) and skin colour (14.3%). Friendly and knowledgeable vendors were cited by some 9.6% of respondents as have some influence in their decision to purchase fresh/chilled chicken from a retail store. Although many respondents spoke of the need for the chicken to be free from disease (4.8%), chemicals and growth promotants (3.6%), they had little way of knowing that the product was safe, other than to rely on their

personal relationship with the vendor. A total of eleven variables were found to be of equal importance in influencing the respondents' decision to purchase fresh/chilled chicken (Table 10.5).

Table 10.5: Importance of variables influencing respondents' decision to purchase fresh/chilled chicken

	Mean	SD
Appropriately slaughtered (Halal)	5.90[a]	0.57
Freshness	5.89[a]	0.36
Halal certificate	5.83[a]	0.63
Smell/Odour	5.79[a]	0.53
Clean/no flies	5.77[a]	0.49
Flesh colour	5.75[a]	0.53
Skin colour	5.69[a]	0.61
Quality assurance label	5.58[a]	0.82
Value for money	5.52[a]	0.69
Competitive price	5.47[a]	0.78
Freedom from chemicals/growth promotants	5.40[a]	0.94
Freedom from antibiotics	5.37[b]	0.94
Country-of-origin	5.34[b]	0.99
Intended use	5.09[c]	0.95
Size	5.08[c]	1.04
Grown on local farms	5.01[d]	1.16
Fat content	4.97[e]	1.17
Available as individual parts	4.88[f]	1.17
Raised in a humane way	4.81[g]	1.16
Organically grown	4.76[g]	1.21
Leanness	4.64[g]	1.28
Label/brand	4.35[h]	1.42
Marbling	4.35[h]	1.37
Pre-packed	4.01[i]	1.41

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

The variables which described similar attributes have been grouped under the same theme, such as Halal (appropriately slaughtered and presenting a Halal certificate), physical appearance of the product (freshness, smell or odour, clean with no flies, flesh and skin colour), extrinsic indicators (quality assurance label, value for money and price) and food safety issues (chicken grown without chemicals or growth promotants).

That variable which was of least importance was pre-packed. Fresh/chilled chicken with a label attached and marbling were of lesser importance in the respondents' decision to purchase fresh/chilled chicken from a retail store. Other variables which

were not so important to the respondents when they purchased fresh/chilled chicken were the way the chicken had been raised (in a humane way or organically grown), and leanness.

Irrespective, it is unlikely that respondents will utilise all 24 variables in their decision to purchase fresh/chilled chicken from a retail store, given that the purchase of chicken is, in the majority of cases, only a routine decision. Principal component analysis was applied in order to reduce the number of variables into a smaller number of components. Principal component analysis, with varimax rotation and Kaiser normalisation, revealed four factors which collectively explained 73.8% of the variance observed in the respondents' decision to purchase fresh/chilled chicken (Table 10.6).

Table 10.6: Factors influencing respondents' decision to purchase fresh/chilled chicken

Variable	Factor			
	1	2	3	4
Organically grown	0.814			
Grown on local farms	0.805			
Freedom from antibiotics	0.795			
Raised in a humane way	0.772			
Freedom from chemicals/growth promotants	0.728			
Flesh colour		0.850		
Smell/odour		0.817		
Skin colour		0.806		
Freshness		0.684		
Clean/no flies		0.680		
Appropriately slaughtered (Halal)			0.972	
Halal certificate			0.934	
Competitive price				0.888
Value for money				0.883
Eigenvalue	5.613	1.881	1.709	1.133
Percent variance	24.39	23.25	13.56	12.63
Cumulative variance	24.39	47.64	61.19	73.83
Cronbach's alpha	0.871	0.854	0.937	0.890
Factor mean	5.09[c]	5.78[a]	5.87[a]	5.49[b]

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 5.61, captured five items which accounted for 24.4% of the variance. The Cronbach's alpha for this factor was 0.87. This factor

was labelled as “poultry production criteria” as it included numerous items regarding the way in which the chicken had been raised. However, this factor was the least important in the respondents’ decision to purchase fresh/chilled chicken.

Factor Two, with an Eigenvalue of 1.88 had five items. This factor accounted for 23.3% of the variance. Factor Two described the “physical appearance” of the product. The items which loaded onto this factor included flesh colour, smell/odour, skin colour, freshness and no flies. The Cronbach’s alpha for this factor was 0.85.

Factor Three, with an Eigenvalue of 1.71 included two items: appropriately slaughtered and Halal certificate. This factor was labelled as “Halal requirements”. The Cronbach’s alpha was 0.94, indicating a very high reliability. The items loading onto this factor clearly indicated the importance of Halal for the majority of respondents. Not unexpectedly, since Malaysia is a Muslim country, this factor was the most important consideration in the respondents’ decision to purchase fresh/chilled chicken.

Factor Four, with an Eigenvalue of 1.13, was labelled “price and value” as it was comprised of two items; competitive price and value for money. According to the mean score, this was the second most important factor respondents took into consideration when purchasing fresh/chilled chicken from a retail store.

In further analysing the importance of the criteria which were thought to be most influential in the respondents’ decision to purchase fresh/chilled chicken, the theory of perceived quality, as introduced by Steenkamp (1990), was applied. From the theory, a quality perception process model was utilised to understand how consumers construct perceptions of quality when selecting a particular product.

A list of variables (Table 10.5) containing attributes (cues) that were thought to be influential in the consumers’ decision to purchase fresh/chilled chicken from a retail store was presented to the respondents who were asked to match the variables with eight desired outcomes: taste, food safety, health and nutrition, value for money, good texture or mouth feel, environmental concerns, worker welfare and Halal guaranteed.

The first desired outcome was based on the respondents' expectation that the fresh/chilled chicken that they purchased would have a good taste. Freshness (75.1%) was the most frequently cited variable respondents believed to be associated with good taste (Table 10.7).

Table 10.7: The association between criteria utilised in the decision to purchase fresh/chilled chicken with a good taste

Desired outcome 1: The food has a good taste	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freshness	117	34	21	172	75.1
Smell/odour	26	37	36	99	43.2
Flesh colour	11	34	39	84	36.7
Skin colour	9	28	12	49	21.4
Clean/no flies	3	21	14	38	16.6
Appropriately slaughtered (Halal)	26	3	2	31	13.5
Organically grown	9	3	14	26	11.4
Leanness	3	6	4	13	5.7
Freedom from chemicals/growth promotants	4	5	3	12	5.2
Quality assurance label	5	5	1	11	4.8
Fat content	1	3	4	8	3.5
Halal certificate	8			8	3.5
Raised in a humane way	1	1	5	7	3.1
Grown on local farms	3	2	1	6	2.6
Freedom from antibiotics		5		5	2.2
Size			4	4	1.7
Competitive price	1		2	3	1.3
Marbling		2	1	3	1.3
Intended use	1			1	0.4
Nutritional value	1			1	0.4
Country-of-origin		1		1	0.4
Available as individual parts		1		1	0.4
Suitable for all kind of dishes		1		1	0.4
Last longer			1	1	0.4
	229				

Other criteria cited by respondents that were perceived to lead to good taste included smell/odour (43.2%), flesh colour (36.7%) and skin colour (21.4%). Some 16.6% of respondents associated clean and no flies with good taste. A few respondents believed that chicken being slaughtered appropriately (13.5%) and raised organically (11.4%) led to food which tasted better. Price (1.3%) and

country-of-origin (0.4%) were seldom cited by respondents as having any influence on the taste of the fresh/chilled chicken purchased.

Freedom from chemicals or growth promotants (51.1%) was the most frequently cited variable utilised by respondents in their decision to purchase fresh/chilled chicken that was perceived to be safe to eat (Table 10.8).

Table 10.8: The association between criteria utilised in the decision to purchase fresh/chilled chicken which is safe to eat

Desired outcome 2: The food is safe to eat	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freedom from chemicals/growth promotants	44	43	30	117	51.1
Appropriately slaughtered (Halal)	73	14	8	95	41.5
Freedom from antibiotics	18	36	23	77	33.6
Halal certificate	39	20	5	64	27.9
Clean/no flies	13	24	21	58	25.3
Quality assurance label	6	13	17	36	15.7
Freshness	11	14	11	36	15.7
Organically grown	5	7	16	28	12.2
Smell/odour	8	9	10	27	11.8
Country-of-origin	3	5	4	12	5.2
Flesh colour	2	2	5	9	3.9
Leanness	2	3	2	7	3.1
Skin colour	2	1	2	5	2.2
Fat content		3	1	4	1.7
Freedom from diseases	2	1		3	1.3
Raised in a humane way	1		2	3	1.3
Grown on local farms		2		2	0.9
Competitive price			2	2	0.9
Label/brand		1	1	2	0.9
Marbling			2	2	0.9
Suitable for all kind of dishes		1		1	0.4
Size			1	1	0.4
Prepacked			1	1	0.4
Last longer			1	1	0.4
	229				

The appropriateness of slaughter, which guaranteed that the food was Halal (41.5%), was the second most frequently cited variable, followed by freedom from antibiotics (33.6%), a Halal certificate (27.9%) and clean/no flies (25.3%). With the exception of clean/no flies, each of these variables could be described as credence quality attributes, for without the use of labels and/or a close personal relationship

with the vendor, respondents had no way of knowing that the product was free of chemicals, growth promotants or antibiotics, or that the chicken had been slaughtered according to Halal principles.

In determining that the food was safe to eat, variables such as freshness (15.7%), smell/odour (11.8%), flesh colour (3.9%) and skin colour (2.2%) were infrequently cited by respondents. This suggested that with regards to food safety, consumers were more concerned about chemical contamination rather than microbial contamination. As the survey was being conducted during the melamine scare, this may have elevated consumers' awareness. Competitive price (0.9%) was among the least frequently cited variables associated with food safety.

Freshness (36.1%) and freedom from chemicals and growth promotants (33.5%) were among the most frequently cited variables respondents used in their decision to purchase fresh/chilled chicken that was perceived to be healthy and nutritious (Table 10.9).

The other criteria mentioned by respondents were organically grown (26.4%) and cleanliness/no flies (24.2%). A third group of variables included flesh colour (18.9%), freedom from antibiotics (18.5%) and leanness (18.1%), although another 15.9% of respondents cited fat content.

The smell/odour (14.9%) and skin colour (10.1%) were also believed to be good indicators that the chicken was healthy and nutritious. Appropriate methods of slaughter (Halal) (13.7%) continued to emerge as an indicator that the meat was healthy and nutritious.

Table 10.9: The association between criteria utilised in the decision to purchase fresh/chilled chicken that is healthy and nutritious

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	57	14	11	82	36.1
Freedom from chemicals/growth promotants	22	34	20	76	33.5
Organically grown	29	13	18	60	26.4
Clean/no flies	16	22	17	55	24.2
Flesh colour	4	17	22	43	18.9
Freedom from antibiotics	8	18	16	42	18.5
Leanness	11	18	12	41	18.1
Fat content	17	13	6	36	15.9
Smell/odour	11	11	12	34	14.9
Appropriately slaughtered (Halal)	22	5	4	31	13.7
Skin colour	6	14	3	23	10.1
Quality assurance label	10	4	4	18	7.9
Grown on local farms	4	1	3	8	3.5
Halal certificate	5	2		7	3.1
Marbling	1	2	4	7	3.1
Size		1	2	3	1.3
Raised with good supervision	1	1		2	0.9
Freedom from diseases	1	1		2	0.9
Quality	2			2	0.9
Country-of-origin		1	1	2	0.9
Prepacked		1	1	2	0.9
Competitive price			2	2	0.9
Raised in a humane way			2	2	0.9
Label/brand			1	1	0.4
	227				

Country-of-origin (0.9%), competitive price (0.9%) and label or brand (0.4%) were infrequently cited by respondents as leading to a perception that the chicken was healthy and nutritious.

Competitive price (64.0%) was by far the most frequently cited variable with regard to purchasing fresh/chilled chicken that was perceived to represent good value for money (Table 10.10).

Table 10.10: The association between criteria utilised in the decision to purchase fresh/chilled chicken that represents good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	91	40	16	144	64.0
Value for money	16	26	21	63	28.0
Freshness	25	24	8	57	25.3
Size	29	13	13	55	24.4
Quality assurance label	16	8	9	33	14.7
Available as individual parts	2	12	10	24	10.7
Intended use	6	6	3	15	6.7
Clean/no flies	3	6	6	15	6.7
Appropriately slaughtered (Halal)	10	3	1	14	6.2
Freedom from chemicals/growth promotants	1	2	10	13	5.8
Label/brand	3	1	9	13	5.8
Country-of-origin	2	3	5	10	4.4
Organically grown	4	1	3	8	3.6
Flesh colour		6	2	8	3.6
Leanness		5	2	7	3.1
Halal certificate	3	3	1	7	3.1
Smell/odour	2	2	2	6	2.7
Grown on local farms	4	1	1	6	2.7
Prepacked	1	2	2	5	2.2
Marbling	1	1	1	3	1.3
Quality	3			3	1.3
Freedom from antibiotics		1	1	2	0.9
Fat content			1	1	0.4
Skin colour			1	1	0.4
Raised in a humane way	1			1	0.4
Nutritional value	1			1	0.4
The kids love it	1			1	0.4
Freedom from diseases		1		1	0.4
Easy to cook		1		1	0.4
	225				

Other variables that indicated that the chicken would bring greater value to the respondents were value for money (28.0%), freshness (25.3%) and size (24.4%). This grouping of variables signified that value for money was a subjective assessment. In this case, it was derived from both the extrinsic cues (value for money) and the physical attributes of the product (freshness and size). Each respondent had different views on what value meant to them. For example, consumers perceived that a large chicken purchased at a low price would bring greater value to them.

Chicken with a quality assurance label (14.7%), chicken that was available as individual parts (10.7%) and the intended use (6.7%) provided another group of variables that were often associated with good value for money. In making their decision to purchase fresh/chilled chicken, some respondents may search for product information available on the label. Other respondents may associate the various portions of the chicken with what they plan or intend to cook. This represented good value to consumers because less product would be wasted.

However, with regard to chicken that represented good value for money, respondents were less concerned about the way the chicken may have been raised including freedom from antibiotics (0.9%), raised in a humane way (0.4%) and freedom from disease (0.4%).

In identifying the attributes that were perceived to lead to good texture and mouth feel, the responses were very similar to those that were perceived to relate to good taste: freshness (50.1%), smell/odour (36.5%), flesh colour (33.8%) and skin colour (30.6%) (Table 10.11).

Respondents also cited chicken as having been raised organically (15.3%). However, in comparison to those attributes that respondents perceived would lead to good taste, respondents believed that the leanness of the meat (14.4%), marbling (8.1%) and the fat content (7.2%) had a greater impact on the texture and mouth feel of the meat. The amount of fat in part determines the tenderness of the meat (Grunert et al. 2004). Therefore, chicken with more fat was considered to be more tender and to have a better texture.

Table 10.11: The association between criteria utilised in the decision to purchase fresh/chilled chicken with the desired texture and mouth feel

Desired outcome 5: The food had good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	77	26	10	113	50.1
Smell/odour	23	27	31	81	36.5
Flesh colour	14	31	30	75	33.8
Skin colour	24	34	10	68	30.6
Organically grown	20	6	8	34	15.3
Leanness	11	14	7	32	14.4
Clean/no flies	7	9	10	26	11.8
Freedom from chemicals/growth promotants	4	9	6	19	8.6
Appropriately slaughtered (Halal)	12	4	2	18	8.1
Marbling	7	5	6	18	8.1
Fat content	4	7	5	16	7.2
Freedom from antibiotics	1	5	6	12	5.4
Quality assurance label	3	3	3	9	4.1
Size	1	3	3	7	3.2
Halal certificate	2		3	5	2.6
Raised in a humane way	3		2	5	2.6
Grown on local farms	1	1	2	4	1.8
Competitive price			3	3	1.4
Prepacked	2		1	3	1.4
Available as individual parts	2			2	0.9
Intended use	1	1		2	0.9
Label/brand	2			2	0.9
Country-of-origin			1	1	0.5
Nutritional value	1			1	0.5
Suitable for all kind of dishes		1		1	0.5
Last longer			1	1	0.5
	222				

Variables such as raising the chicken in a humane way (2.6%), locally grown (1.8%), competitive price (1.4%) or prepacked (1.4%) were seldom related to the texture or mouth feel.

Respondents believed that chicken raised organically (65.4%) would have a more beneficial impact on the environment (Table 10.12).

Table 10.12: The association between criteria utilised in the decision to purchase fresh/chilled chicken that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organically grown	78	29	35	142	65.4
Freedom from chemicals/growth promotants	45	38	18	101	46.5
Freedom from antibiotics	13	34	27	74	34.1
Grown on local farms	17	26	9	52	23.9
Raised in a humane way	27	11	12	50	23.0
Clean/no flies	4	7	3	14	6.5
Freshness	7	5	1	13	5.9
Appropriately slaughtered (Halal)	7	2	2	11	5.1
Quality assurance label	3	6	2	11	5.1
Halal certificate	7	1	2	10	4.6
Country-of-origin	4	2		6	2.8
Flesh colour		3	2	5	2.3
Smell/odour			4	4	1.8
Label/brand	1	2	1	4	1.8
Leanness	1	1	1	3	1.4
Fat content			2	2	0.9
Competitive price			2	2	0.9
Marbling			1	1	0.5
Size	1			1	0.5
Available as individual parts	1			1	0.5
Intended use			1	1	0.5
Free from disease	1		1	1	0.5
	217				

Chicken grown without chemicals or growth promotants (46.5%) and freedom from antibiotics (34.1%) were also linked with food that had been produced in a more environmentally friendly way. Locally produced chicken (23.9%) and chicken that had been raised in a humane way (23.0%) were also perceived to have less impact on the environment.

Those variables which respondents perceived to have little impact on the environment included cleanliness (6.5%), freshness (5.9%), appropriate slaughter (5.1%), a quality assurance label (5.1%), or a Halal certificate (4.6%).

Locally grown chicken (43.9%) was also perceived to have been produced in a way that protected worker welfare (Table 10.13).

Table 10.13: The association between criteria utilised in the decision to purchase fresh/chilled chicken that protected worker welfare

Desired outcome 7: The food has been produce in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Grown on local farms	55	27	8	90	43.9
Raised in a humane way	37	22	13	72	35.1
Freedom from chemicals/growth promotants	38	21	11	70	34.1
Organically grown	21	15	20	56	27.3
Freedom from antibiotics	4	17	17	38	18.5
Appropriately slaughtered (Halal)	11	3	6	20	9.8
Clean/no flies	2	8	3	13	6.3
Freshness	5	6	1	12	5.9
Quality assurance label	5	2	3	10	4.9
Halal certificate	9		1	10	4.9
Country-of-origin	4	3	2	9	4.4
Prepacked	3	3	1	7	3.4
Label/brand	2	2	2	6	2.9
Competitive price	3		3	6	2.9
Intended use	1		5	6	2.9
Available as individual parts	1	4		5	2.4
Smell/odour			3	3	1.5
Freedom from diseases	1	1	1	3	1.5
Leanness	2			2	0.9
Flesh colour		1		1	0.5
Value for money	1			1	0.5
	205				

With regards to worker welfare, the responses were very similar to those perceived to relate to preservation of the environment: raising the chicken in a humane way (35.1%), freedom from chemicals and growth promotants (34.1%), organically grown (27.3%) and freedom from antibiotics (18.5%). Chicken raised on local farms were perceived to promote worker welfare due to the respondents understanding of local poultry production. Chicken growers are required to attend training sessions conducted by the Department of Veterinary Services (Department of Veterinary Services n.d.) to ensure that they are well trained and familiar in managing a poultry farm.

Again, issues relating to Halal such as appropriate slaughter (9.8%) and an Halal certificate (4.9%) were seldom associated with worker welfare.

Most respondents associated chicken that was guaranteed Halal with a Halal certificate (81.3%) and chicken that had been appropriately slaughtered according to Islamic regulations (73.7%) (Table 10.14).

Table 10.14: The association between criteria utilised in the decision to purchase fresh/chilled chicken that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	**Ranking**			**N**	**%**
	1	**2**	**3**		
Halal certificate	80	97	5	182	81.3
Appropriately slaughtered (Halal)	125	31	9	165	73.7
Quality assurance label	2	19	47	68	30.4
Country-of-origin	1	6	22	29	12.9
Label/brand	8		10	18	8.0
Grown on local farms	1	4	5	10	4.5
Clean/no flies		4	6	10	4.5
Freshness	3	4	1	8	3.6
Freedom from chemicals/growth promotants	1	2	1	4	1.8
Raised in a humane way	2		1	3	1.3
Organically grown		2	1	3	1.3
Competitive price			2	2	0.9
Flesh colour			2	2	0.9
Freedom from antibiotics	1			1	0.4
Skin colour		1		1	0.4
Not mixed with non-Halal items		1		1	0.4
	224				

A quality assurance label (30.4%) was the third most frequently cited variable respondents associated with the purchase of fresh/chilled chicken that was guaranteed Halal. Furthermore, the origin of the chicken (12.9%) and the label or brand (8.0%) also provided some indication as to whether the product was guaranteed Halal.

With the exception of desired outcome four, competitive price was one of the variables least often cited by respondents in their decision to purchase fresh/chilled chicken. Competitive price was seldom associated with the taste of the chicken, whether it was safe to eat, healthy and nutritious, or whether it had a good texture and mouth feel. This suggests that there is little relationship between price and the quality of the fresh/chilled chicken available in most retail outlets in Malaysia. Changes in price are most often related to changes in the supply and demand, rather

than to any difference in the physical attributes of the meat, except for the size of the chicken. Manzor and Alyasa (2010) indicated that the price for fresh chicken increased between RM0.30 to RM1.50 per kilogram due to the increased demand for chicken meat during the school holidays, a popular period when a lot of wedding ceremonies are held. Conversely, Yeung and Morris (2001) reported that free range chicken was more expensive than normal chicken. Here, respondents believed that free range chicken was of better quality, for it had been produced with less antibiotics (food is safe to eat) and it tasted better. Similarly, Harper and Makatouni (2002) reported that the cost of purchasing organic and free range food, which included chicken, was more expensive than normal food, it was safer to eat and more beneficial for the consumers' health.

Kennedy et al. (2004) was able to demonstrate an association between price and value for money. According to Kennedy et al. (2004), although several chicken portions such as breast fillets were reported to be more expensive than a whole chicken, chicken portions provide better value for money for the buyer, given that almost all of the meat is used which results in less waste.

With regards to the environment and worker welfare, competitive price was infrequently cited by respondents, presumably because most respondents recognised that imposing more regulations would increase the price. Similarly, when considering that the food was guaranteed Halal, a competitive price was not a consideration.

The importance of each of the desired values was then ranked by respondents. The importance of Halal, food that was safe to eat and food that was healthy and nutritious were all equally important in the respondents' decision to purchase fresh/chilled chicken (Table 10.15).

Table 10.15: Importance of criteria respondents use in their decision to purchase fresh/chilled chicken in a retail store

	Mean	SD
The food is guaranteed Halal	5.87[a]	0.62
The food is safe to eat	5.85[a]	0.39
The food is healthy and nutritious	5.80[a]	0.49
The food had good texture/mouth feel	5.61[b]	0.69
The food has a good taste	5.58[c]	0.74
The food represents value for money	5.44[d]	0.82
The food has been produced in a way that is good for the environment	5.16[e]	1.00
The food has been produced in a way that protects worker welfare	5.01[e]	1.09

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Conversely, those issues that related to the environment and to worker welfare were significantly less important to respondents.

Some 37.8% of respondents were found to be always dissatisfied with the Halal status of the meat, while another 30.0% of respondents always had reservations about the safety of the fresh/chilled chicken they had purchased (Table 10.16).

Respondents often felt dissatisfied that the fresh/chilled chicken they had purchased was unhealthy and not nutritious (23.0%), did not represent good value for money (21.9%) or had a poor texture/mouth feel (20.8%). Some 17.5% of respondents were displeased with the taste of the fresh/chilled chicken they had purchased, and another 16.1% of respondents were dissatisfied with the way in which poultry production impacted on the environment. Some 17.0% of respondents were dissatisfied with the way in which poultry production impacted on worker welfare.

Despite the unsatisfactory experiences, more than half of the respondents (50.6%) had never purchased fresh/chilled chicken that was not Halal. Similarly, more than half of the respondents (56.5%) had never (or at worst one time in ten) had an unpleasant experience when purchasing fresh/chilled chicken that was unsafe to eat, that did not protect worker welfare (54.7%), that did not deliver a good taste (54.0%), was unhealthy (53.2%), had a poor texture/mouth feel (52.0%) or was not good for the environment (51.0%). Conversely, only 47.0% of respondents reported that they were very seldom disappointed with the purchase of fresh/chilled chicken

meat that represented good value for money. This would suggest that for a large segment of the Malay population, price was a major consideration in their decision to purchase fresh/chilled meat.

Table 10.16: Occasions where respondents felt unhappy with the quality of fresh/chilled chicken purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 251	50.6	7.6	1.2	0.4	0.8	1.6	37.8	1.0	1.0
The food is safe to eat. N = 253	41.5	15.0	4.0	0.8	3.2	5.5	30.0	1.0	2.0
The food is healthy and nutritious. N = 252	34.9	18.3	6.3	2.8	4.4	10.3	23.0	1.0	2.0
The food represents value for money. N = 251	25.9	21.1	7.2	7.2	6.0	10.8	21.9	1.0	3.0
The food has good texture/mouth feel. N = 250	26.8	25.2	5.6	4.8	4.8	12.0	20.8	1.0	2.0
The food has a good taste. N = 252	27.8	26.2	11.1	4.0	3.6	9.9	17.5	1.0	2.0
The food has been produced in a way that protects worker welfare. N = 247	38.9	15.8	6.9	6.1	5.7	9.7	17.0	1.0	2.0
The food has been produced in a way that is good for the environment. N = 249	34.9	16.1	10.0	4.8	8.0	10.0	16.1	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

For those respondents who expressed their dissatisfaction with the quality of the fresh/chilled chicken purchased, in the majority of cases, it was found not to be fresh (74.3%) (Table 10.17).

Table 10.17: Reasons for dissatisfaction with the quality of fresh/chilled chicken

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Not fresh	83	37	23	6	7	156	74.3
Smelly	29	31	15	7	5	87	41.4
Price	27	16	15	9	5	72	34.3
Taste	15	10	7	7	4	43	20.5
Colour	10	13	10	7	3	43	20.5
Bad texture	9	15	9	4	4	41	19.5
Not clean	7	13	6	5	2	33	15.7
Not Halal guaranteed	11	6	6	2	2	27	12.9
How chicken is grown is unknown	4	8	5	5	2	24	11.4
Size	4	6	3	3	3	19	9.0
No cleaning/cutting service	1	5	2	3	7	18	8.6
A lot of fat	3	5	3	6	1	18	8.6
No quality	5	3	1	1	1	11	5.2
Prepacked	1	1		3		5	2.4
Frozen/chilled for too long	1	1				2	0.9
Availability			1	1		2	0.9
Wastage					1	1	0.5
	210						

Respondents were also dissatisfied when the fresh/chilled chicken purchased was found to have an unpleasant smell (41.4%). Several respondents also expressed their dissatisfaction with the physical attributes of the fresh/chilled chicken purchased such as colour (20.5%), texture (19.5%) and lack of cleanliness (15.7%). Many respondents were also disappointed with the price of the chicken (34.3%) stating that the meat was too expensive. Some 12.9% of respondents were dissatisfied when the fresh/chilled chicken available in some retail outlets was not or could not be guaranteed Halal (12.9%). Other respondents (11.4%) were concerned by the lack of information about how the chicken had been raised.

10.3 Part Two: The purchase of fresh/chilled beef

The total number of respondents who purchased fresh/chilled beef (189) was considerably lower than the number of respondents who purchased fresh/chilled chicken (255). The main reason given by respondents who chose not to purchase beef was concern for their family or their own health.

Only 23.2% of respondents purchased fresh/chilled beef at least one time per week (Table 10.18).

Table 10.18: Frequency of purchasing fresh/chilled beef

	N	%
Everyday	1	0.5
2 – 3 times per week	11	5.8
Once a week	32	16.9
Once every 2 weeks	48	25.4
Once a month	70	37.0
Others	27	14.3
	189	100.0

Some 37.0% of respondents purchased fresh/chilled beef only one time per month, while 25.4% of respondents purchased fresh/chilled beef only one time per fortnight. Some 14.3% of respondents purchased fresh/chilled beef only during the festive seasons.

When purchasing fresh/chilled beef, most respondents selected topside (53.4%) and beef cubes (30.0%) as their preferred cuts (Table 10.19).

Table 10.19: Forms respondents most often purchase fresh/chilled beef (%)

	Mean	SD
Beef topside	53.4	33.1
Beef cube	30.0	24.6
Beef strip	26.3	18.1
Beef tenderloin	23.1	24.8
Beef chuck tender	22.1	18.5
Soup meat	21.6	17.9
Beef bone (soup)	20.7	17.8
Beef minced	17.8	16.2
Beef cutlet	15.8	13.5
Beef eye round	15.7	12.3
Beef fillet	15.3	13.5
Beef t-bone	14.4	13.9
Ox tail	12.8	11.5

The most popular method for respondents to cook beef was to fry the meat (63.9%) and to make soup (61.8%) (Table 10.20).

Table 10.20: Methods how respondents cook beef

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Fried	45	33	24	12	5	119	63.9
Soup	58	32	10	11	4	115	61.8
Red curry	17	21	18	10	3	69	37.1
Roasted	11	12	12	17	9	61	32.8
Boiled	15	11	10	4	2	42	22.6
Green curry	9	15	14	3	1	42	22.6
Soy sauce	5	15	9	8	1	38	20.4
Rendang	6	11	7	4	9	37	19.9
Additional flavouring	1	4	8	5	3	21	11.3
Any other dishes	10	6	1	2	1	20	10.8
Sambal		4	4	6	5	19	10.2
BBQ	1	2	4	5	3	15	8.1
Kurma	1	5	3	1	4	14	7.5
Spaghetti	1		2	2	2	7	3.8
Tomato	2		4			6	3.2
Steam			3	1	2	6	3.2
Stew	2	1	1		1	5	2.7
Black pepper	2		1	1		4	2.2
Tom Yam			2	1	1	4	2.2
Asam pedas			2			2	1.1
Beef floss					2	2	1.1
Sauté		1				1	0.5
Porridge			1			1	0.5
Turmeric					1	1	0.5
	186						

Some 37.1% of respondents used beef to make red curry, while 32.8% of respondents prepared roast beef. Other methods to cook beef were to boil the meat (22.6%), make green curry (22.6%) and to cook with soy sauce (20.4%). Several respondents mentioned that they use beef in *rendang* (19.9%), a popular dish served during the Eid feast. Beef was also used in preparing traditional Malaysian cuisine such as *sambal* (10.2%), *kurma* (7.5%), *tom yam* (2.2%) and *asam pedas* (1.1%).

Most respondents cited freshness (80.0%) as that variable which was most influential in their decision to purchase fresh/chilled beef (Table 10.21).

Whether the beef was Halal (58.9%) was the second most frequently cited variable, followed by price (47.0%) and cleanliness (40.0%). Other variables mentioned

included the colour of the meat (27.0%) and the respondents' sense of smell (18.9%).

Table 10.21: Variables respondents consider in their decision to purchase fresh/chilled beef

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	62	50	18	9	9	148	80.0
Halal	68	9	16	11	5	109	58.9
Price	10	25	18	20	14	87	47.0
Clean	8	25	16	17	8	74	40.0
Colour	11	21	11	4	3	50	27.0
No smell		6	16	11	2	35	18.9
Quality	1	6	13	4	3	27	14.6
Texture	3	7	6	6	2	24	12.8
Country-of-origin	7	5	5	2	5	24	12.8
Leanness	5	2	8	5	3	23	12.4
Variety	2	4	5	5	5	21	11.4
Muslim vendors	2	4	1	4	3	14	7.6
Freedom from chemicals/preservatives		2	2	3	3	10	5.4
Size			5	2	1	8	4.3
Nicely packed		2	3	2		7	3.8
Date of packed displayed	1	2		2	1	6	3.2
Type of shop		1	1	2	1	5	2.7
Location – near my house/office	3			1		4	2.2
Facilities that are available		1	2	1		4	2.2
Stored in a chilled place	1			1	1	3	1.6
Taste	1				1	2	1.1
Intended use					2	2	1.1
Display area			1			1	0.5
I can also buy other products					1	1	0.5
	185						

The origin of the meat (12.8%) was also cited as being influential in their decision to purchase fresh/chilled beef due to personal preferences. Some respondents preferred to buy local beef, while others preferred to purchase imported beef. Several respondents were influenced by the leanness of the meat (12.4%) and the variety of the cut (11.4%), for different methods of preparing the meat require different cuts. Freedom from chemicals and preservatives (5.4%) were seldom mentioned as influencing the respondents' decision to purchase fresh/chilled beef.

A total of eleven variables were identified as being of equal importance to respondents in their decision to purchase fresh/chilled beef (Table 10.22).

Table 10.22: Importance of variables influencing respondents' decision to purchase fresh/chilled beef

	Mean	SD
Appropriately slaughtered (Halal)	5.90[a]	0.44
Halal certificate	5.88[a]	0.43
Freshness	5.87[a]	0.37
Clean/no flies	5.79[a]	0.47
Smell/Odour	5.76[a]	0.57
Flesh colour	5.74[a]	0.59
Quality assurance label	5.54[a]	0.75
Competitive price	5.46[a]	0.79
Value for money	5.44[a]	0.81
Freedom from chemicals/growth promotants	5.40[a]	0.87
Freedom from antibiotics	5.38[a]	0.92
Country-of-origin	5.29[b]	0.99
Leanness	5.28[b]	0.92
Marbling/fat content	5.24[b]	0.91
Intended use	5.18[c]	1.01
Available as individual parts	5.17[d]	1.12
Grown on local farms	5.16[d]	1.07
Organically grown	5.08[d]	1.04
Raised in a humane way	4.97[d]	1.11
Size	4.89[e]	1.15
Label/brand	4.66[f]	1.28
Skin colour	4.58[g]	1.75
Pre-packed	4.39[h]	1.32

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Variables in this first group included Halal (appropriately slaughtered and Halal certificate), the physical appearance of the meat (freshness, clean/no flies, smell/odour and flesh colour), extrinsic attributes (quality assurance label, competitive price and value for money) and food safety concerns (no chemicals or growth promotants and free from antibiotics).

A second group of variables which was of considerable importance to respondents in their decision to purchase fresh/chilled beef included country-of-origin, leanness and marbling or fat content.

Principal component analysis with varimax rotation and Kaiser normalisation revealed five factors which collectively explained 69.7% of the variance observed in influencing respondents' decision to purchase fresh/chilled beef (Table 10.23).

Table 10.23: Factors influencing respondents' decision to purchase fresh/chilled beef

	Factor				
	1	**2**	**3**	**4**	**5**
Freedom from chemicals/growth promotants	0.860				
Freedom from antibiotics	0.811				
Raised in a humane way	0.790				
Organically grown	0.777				
Grown on local farms	0.730				
Pre-packed		0.744			
Label/brand		0.711			
Size		0.707			
Intended use		0.655			
Available as individual parts		0.635			
Smell/odour			0.712		
Clean/no flies			0.710		
Flesh colour			0.668		
Value for money				0.820	
Competitive price				0.819	
Appropriately slaughtered (Halal)					0.864
Halal certificate					0.855
Eigenvalue	5.922	1.915	1.620	1.277	1.112
Percent variance	20.98	16.53	10.96	10.83	10.37
Cumulative variance	20.98	37.51	48.48	59.31	69.67
Cronbach's alpha	0.881	0.783	0.652	0.936	0.735
Factor mean	5.19^{c}	4.86^{d}	5.77^{a}	5.46^{b}	5.89^{a}

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 5.92 captured five items and accounted for 20.9% of the variance. This factor could be labelled as "cattle production criteria" since this construct contained implicit items regarding how the cattle had been raised. The Cronbach's alpha for this factor was 0.88. However, in making their decision to purchase fresh/chilled beef, this factor was only the third most important.

Factor Two, with an Eigenvalue of 1.92 also had five items which accounted for 16.5% of the variance. Items in Factor Two described the availability of different

cuts and sizes, and pre-packaged meat which had a label or a brand. The Cronbach's alpha for this factor was 0.78. However, this factor was the least important in the respondents' decision to purchase fresh/chilled beef from a retail store. This factor was labelled as "functional quality" for it described the availability of the product in a manner which related to the way in which the respondent intended to use the product.

Factor Three captured three items which described the "intrinsic cues of the product": smell, cleanliness and colour. The Cronbach's alpha for this factor was 0.65 and it explained 10.9% of the variance. This factor was one of the most important criteria respondents considered in their decision to purchase fresh/chilled beef.

Factor Four, with an Eigenvalue of 1.28, captured two items that accounted for 10.8% of the variance. The Cronbach's alpha for this factor was 0.94, indicating a very high reliability. This factor was labelled as "price and value". Factor Four was the second most important variable considered by respondents when purchasing fresh/chilled beef.

Factor Five included two items that collectively captured the need for "Halal". It accounted for 10.4% of the variance. With a Cronbach's alpha of 0.74, the item was considered reliable. This factor was also one of the most important in the respondents' decision to purchase fresh/chilled beef from a retail outlet.

Respondents were then asked to identify the extent to which the various variables could be used/employed to predict desired outcomes. Most respondents (69.6%) suggested that freshness was a good indicator of taste (Table 10.24).

Other variables that were most frequently linked to good taste were flesh colour (50.3%) and the smell or odour of the meat (46.6%). Skin colour (14.9%), cleanliness (14.9%) and leanness of the meat (14.3%) provided a third group of variables. Price (1.2%) and the country-of-origin of the fresh/chilled beef (0.6%) were perceived to have little impact on the taste of the product.

Table 10.24: The association between criteria utilised in the decision to purchase fresh/chilled beef and good taste

Desired outcome 1: The food has a good taste	Ranking			N	%
	1	2	3		
Freshness	53	42	17	112	69.6
Flesh colour	34	31	16	81	50.3
Smell/odour	12	28	35	75	46.6
Skin colour	16	5	3	24	14.9
Clean/no flies	6	6	12	24	14.9
Leanness	5	8	10	23	14.3
Appropriately slaughtered (Halal)	16	1	1	18	11.2
Marbling/fat content	4	7	4	15	9.3
Organically grown	3	1	4	8	4.9
Halal certificate	6	1	1	8	4.9
Freedom from chemicals/ growth promotants	1	4	3	8	4.9
Grown on local farms	2		3	5	3.1
Intended use		2	3	5	3.1
Freedom from antibiotics		2		2	1.2
Size			2	2	1.2
Competitive price		2		2	1.2
Available as individual parts	2		2	2	1.2
Quality assurance label			1	1	0.6
Country-of-origin		1		1	0.6
Value for money	1			1	0.6
	161				

The means by which the cattle had been slaughtered (38.7%) and freedom from chemicals and growth promotants (37.7%) were the two most frequently cited variables that were believed to guarantee that the meat was safe to eat (Table 10.25).

With regards to food safety, other variables that were frequently cited by respondents described the physical appearance of the meat such as clean/no flies (32.1%) and freshness (20.4%). Information provided by vendors such as cattle raised free from antibiotics (29.0%) and the availability of an Halal certificate (26.5%) provided additional assurances that the meat was safe to eat. Only a few respondents (0.6%) linked variables such as chilled/refrigerated to meat that was considered safe to eat. Similarly, price was cited by only 0.6% of respondents as providing an assurance that the meat was safe to eat.

Table 10.25: The association between criteria utilised in the decision to purchase fresh/chilled beef which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Appropriately slaughtered (Halal)	34	16	13	63	38.9
Freedom from chemicals/growth promotants	24	20	17	61	37.7
Clean/no flies	32	12	8	52	32.1
Freedom from antibiotics	9	24	14	47	29.0
Halal certificate	24	11	8	43	26.5
Freshness	11	13	9	33	20.4
Quality assurance label	5	9	10	24	14.8
Smell/odour	3	9	9	21	12.9
Organically grown	6	5	8	19	11.7
Flesh colour	6	5	5	16	9.9
Country-of-origin	3	5	7	15	9.3
Grown on local farms		3	3	6	3.7
Marbling/fat content	1	1	4	6	3.7
Leanness		2	1	3	1.9
Raised in a humane way		1	2	3	1.9
Skin colour	3			3	1.9
Label/brand			2	2	1.2
Prepacked	1	1		2	1.2
Chilled/refrigerated			1	1	0.6
Competitive price		1		1	0.6
Size			1	1	0.6
	162				

In determining that the beef was healthy and nutritious, freshness (42.1%) was the most frequently cited variable (Table 10.26).

Other variables that were linked to health and nutrition were freedom from chemicals or growth promotants (28.3%), flesh colour (23.9%), cleanliness (22.6%), freedom from antibiotics (22.0%), organically grown (21.4%) and the leanness of the meat (21.4%).

The country-of-origin (0.6%), a competitive price (0.6%) and label or brand (0.6%) were the variables least often cited by respondents as inferring that the meat was healthy and nutritious.

Table 10.26: The association between criteria utilised in the decision to purchase fresh/chilled beef with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	36	18	13	67	42.1
Freedom from chemicals/growth promotants	8	20	17	45	28.3
Flesh colour	13	17	8	38	23.9
Clean/no flies	15	12	9	36	22.6
Freedom from antibiotics	11	14	10	35	22.0
Organically grown	19	7	8	34	21.4
Leanness	10	8	16	34	21.4
Smell/odour	6	6	11	23	14.5
Marbling/fat content	4	12	6	22	13.8
Appropriately slaughtered (Halal)	15	2	2	19	11.9
Quality assurance label	8	4	5	17	10.7
Halal certificate	8	2	2	12	7.5
Skin colour	5	3	2	10	6.3
Grown on local farms		4	3	7	4.4
Raised in a humane way	1	1	1	3	1.9
Country-of-origin		1		1	0.6
Competitive price		1		1	0.6
Label/brand		1		1	0.6
	159				

Competitive price (64.7%) was the most frequently cited variable associated with good value for money (Table 10.27).

In the purchase of fresh/chilled beef, good value was ascertained by such variables as freshness (26.3%), value for money (22.4%), a quality assurance label (20.5%) and size (19.2%). Value was apparently a compromise between two variables that captured both the extrinsic cues (value for money and quality assurance label) and the physical attributes of the meat (freshness and size).

A third group of variables which were perceived to lead to value when purchasing fresh/chilled beef were label/brand (9.6%), appropriate slaughter (7.7%), availability of individual parts (7.1%), the intended use (6.4%) and Halal certification (6.4%).

Table 10.27: The association between criteria utilised in the decision to purchase fresh/chilled beef that represented good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	60	31	10	101	64.7
Freshness	17	19	5	41	26.3
Value for money	16	10	9	35	22.4
Quality assurance label	6	12	14	32	20.5
Size	15	6	9	30	19.2
Label/brand	6	1	8	15	9.6
Appropriately slaughtered (Halal)	6	5	1	12	7.7
Available as individual parts		6	5	11	7.1
Intended use	4	3	3	10	6.4
Halal certificate	5	3	2	10	6.4
Flesh colour	5	1	3	9	5.8
Clean/no flies	3	2	3	8	5.1
Smell/odour		3	5	8	5.1
Freedom from chemicals/growth promotants	1	3	4	8	5.1
Country-of-origin		3	4	7	4.5
Grown on local farms	3	2	2	7	4.5
Leanness	2	2	3	7	4.5
Prepacked	4	2		6	3.8
Organically grown			3	3	1.9
Marbling/fat content	1	1	1	3	1.9
Freedom from antibiotics	1		1	2	1.3
Skin colour	1			1	0.6
	156				

More than half of the respondents perceived that there was a positive association between freshness (57.9%) and the texture or mouth feel of the fresh/chilled beef purchased (Table 10.28).

Other variables identified by respondents as good predictors of the desired texture and mouth feel included flesh colour (46.5%) and the sense of smell (30.6%). The fat content (17.2%) and leanness of the meat (16.6%) were also associated with a good texture or mouth feel for fresh/chilled beef. Such variables as competitive price, animal welfare, prepacked beef and the country-of-origin of the beef were cited by only one respondent as having any impact on texture or mouth feel.

Table 10.28: The association between criteria utilised in the decision to purchase fresh/chilled beef with good texture/mouth feel

Desired outcome 5: The food had good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	46	32	13	91	57.9
Flesh colour	26	27	20	73	46.5
Smell/odour	9	17	22	48	30.6
Marbling/fat content	11	12	4	27	17.2
Leanness	12	7	7	26	16.6
Organically grown	7	7	7	21	13.4
Clean/no flies	8	4	8	20	12.7
Skin colour	12	5	2	19	12.1
Appropriately slaughtered (Halal)	9	3	3	15	9.6
Freedom from chemicals/growth promotants	1	6	7	14	8.9
Grown on local farms	1	5	2	8	5.1
Quality assurance label	4		3	7	4.5
Halal certificate	4	1		5	3.2
Freedom from antibiotics	2		3	5	3.2
Intended use	4	1		5	3.2
Size	1	2	1	4	2.5
Available as individual parts			2	2	1.3
Raised in a humane way			1	1	0.6
Competitive price		1		1	0.6
Prepacked			1	1	0.6
Country-of-origin		1		1	0.6
	157				

The two variables that respondents most often associated with environmental stewardship included organically raised (53.9%) and freedom from chemicals and growth promotants (49.4%) (Table 10.29).

Freedom from antibiotics (30.5%), raised on local farms (25.3%) and raised in a humane way (20.8%) were also perceived as having some positive impact on the environment.

Issues regarding Halal such as the availability of a Halal certification (6.5%) and appropriate slaughter (5.2%) were seldom cited by respondents in linking fresh/chilled beef production with environmental stewardship. Likewise, competitive price (0.6%) was seldom linked with concern for the environment.

Table 10.29: The association between criteria utilised in the decision to purchase fresh/chilled beef that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organically grown	45	19	19	83	53.9
Freedom from chemicals/growth promotants	23	33	20	76	49.4
Freedom from antibiotics	18	15	14	47	30.5
Grown on local farms	19	15	5	39	25.3
Raised in a humane way	15	9	8	32	20.8
Freshness	7	3	3	13	8.4
Halal certificate	8	1	1	10	6.5
Country-of-origin	4	2	2	8	5.2
Appropriately slaughtered (Halal)	6		2	8	5.2
Quality assurance label	2	5		7	4.5
Leanness	3	1	3	7	4.5
Clean/no flies	2	1	3	6	3.9
Flesh colour		2	1	3	1.9
Smell/odour		1	2	3	1.9
Label/brand	1	2		3	1.9
Marbling/fat content		1	1	2	1.3
Intended use			2	2	1.3
Skin colour	1	1		2	1.3
Competitive price		1		1	0.6
	154				

Cattle grown on local farms (43.5%) and raised in a humane way (39.5%) were the most frequently cited associations respondents made between the purchase of fresh/chilled beef and protecting worker welfare (Table 10.30).

Other variables mentioned by respondents included freedom from chemicals or growth promotants (29.9%) and organically grown (22.4%).

With regards to worker welfare, variables describing the physical appearance of the meat such as freshness (4.8%), smell/odour (2.0%) and flesh colour (2.0%) were seldom cited by respondents. Competitive price (2.0%) and value for money (0.7%) were also perceived to have little association with enhancing worker welfare.

Table 10.30: The association between criteria utilised in the decision to purchase fresh/chilled beef that protects worker welfare

Desired outcome 7: The food has been produce in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Grown on local farms	37	19	8	64	43.5
Raised in a humane way	35	14	9	58	39.5
Freedom from chemicals/growth promotants	17	18	9	44	29.9
Organically grown	10	11	12	33	22.4
Appropriately slaughtered (Halal)	11	1	8	20	13.6
Freedom from antibiotics	4	6	8	18	12.2
Country-of-origin	7	4	5	16	10.9
Quality assurance label	2	8	1	11	7.5
Clean/no flies	2	4	3	9	6.1
Halal certificate	8	1		9	6.1
Freshness	4	1	2	7	4.8
Prepacked	3	2	1	6	4.1
Available as individual parts	1	3	1	5	3.4
Label/brand	1	2		3	2.0
Competitive price	2	1		3	2.0
Smell/odour		1	2	3	2.0
Flesh colour		1	2	3	2.0
Intended use	1		1	2	1.4
Value for money	1			1	0.7
Skin colour	1			1	0.7
Marbling/fat content		1		1	0.7
	147				

With regards to ensuring that the meat was guaranteed Halal, a Halal certificate (81.1%) and appropriate slaughter (73.6%) were the variables most often cited by respondents (Table 10.31).

A quality assurance label (28.9%) and the country-of-origin of the fresh/chilled beef (18.2%) were the two other variables respondents most often associated with guarantees that the meat was Halal. A competitive price (0.6%) and the physical appearance of the product such as freshness (2.5%), flesh colour (1.9%) and skin colour (0.6%) were mentioned by only a few respondents as signalling that the meat was guaranteed Halal.

Table 10.31: The association between criteria utilised in the decision to purchase fresh/chilled beef that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	Ranking			N	%
	1	2	3		
Halal certificate	75	47	7	129	81.1
Appropriately slaughtered (Halal)	69	35	13	117	73.6
Quality assurance label	4	18	24	46	28.9
Country-of-origin	6	9	14	29	18.2
Label/brand	1	3	5	9	5.7
Grown on local farms		2	6	8	5.0
Clean/no flies		1	5	6	3.8
Raised in a humane way	2	1	2	5	3.1
Freshness	1		3	4	2.5
Flesh colour	1		2	3	1.9
Available as individual parts		1		1	0.6
Freedom from chemicals/growth promotants			1	1	0.6
Organically grown			1	1	0.6
Competitive price		1		1	0.6
Smell/odour			1	1	0.6
Skin colour		1		1	0.6
Intended use		1		1	0.6
Prepacked			1	1	0.6
	159				

The importance of the desired values were then ranked by respondents. Five desired values had a similar influence on the respondents' decision to purchase fresh/chilled beef: the food had to be guaranteed Halal, safe to eat, healthy and nutritious, good tasting and provide a good texture or mouth feel (Table 10.32).

Table 10.32: Importance of criteria respondents use in their decision to purchase fresh/chilled beef in a retail store

	Mean	SD
The food is guaranteed Halal	5.93[a]	0.37
The food is safe to eat	5.86[a]	0.41
The food is healthy and nutritious	5.78[a]	0.48
The food has a good taste	5.67[a]	0.60
The food had good texture/mouth feel	5.65[a]	0.62
The food represents value for money	5.48[b]	0.87
The food has been produced in a way that is good for the environment	5.21[c]	0.98
The food has been produced in a way that protects worker welfare	5.03[d]	1.11

where 1 is "not at all important" and 6 is "very important"

those items with the same superscript are not significantly different at p = 0.05

As expected, environmental issues and worker welfare issues were the least important values in the respondents' decision to purchase fresh/chilled beef.

Some 32.1% of respondents were always dissatisfied with the Halal status of the fresh/chilled beef that they purchased (Table 10.33).

Table 10.33: Occasions where respondents felt unhappy with the quality of fresh/chilled beef purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 184	58.7	4.9	0.5	1.1	1.1	1.6	32.1	1.0	1.0
The food is safe to eat. N = 185	45.9	17.8	1.6	2.7	2.7	5.9	23.2	1.0	2.0
The food is healthy and nutritious. N = 185	37.3	24.3	4.9	2.7	2.2	7.0	21.6	1.0	2.0
The food represents value for money. N = 186	29.0	26.3	10.8	3.8	3.2	7.5	19.4	1.0	2.0
The food has good texture/mouth feel. N = 186	32.8	28.0	5.9	2.2	4.8	8.1	18.3	1.0	2.0
The food has a good taste. N = 187	30.5	33.2	5.3	2.7	3.2	8.0	17.1	2.0	2.0
The food has been produced in a way that protects worker welfare. N = 182	38.5	23.1	7.1	6.0	2.7	8.2	14.3	1.0	2.0
The food has been produced in a way that is good for the environment. N = 183	40.4	21.9	7.7	3.8	4.9	7.7	13.7	1.0	2.0

where 1 is "Never", 2 is "One in ten times", 3 is "One in five times", 4 is "One in four times", 5 is "One in three times", 6 is "One in two times" and 7 is "Every time".

A total of 23.2% of respondents were often disappointed with the food safety level of the fresh/chilled beef purchased, while 21.6% of respondents were often disappointed with the health and nutrition of the meat. Other desired values that were challenging and difficult to satisfy when purchasing fresh/chilled beef included good value for money (19.4%), good texture/mouth feel (18.3%) and good taste (17.1%). Some 14.3% of respondents were always dissatisfied with the way in which cattle were raised so as to protect worker welfare and the environment (13.7%).

Nevertheless, most respondents (63.7%) had hardly ever or, in the worst case, only one time in ten, had an unpleasant experience with regard to poor taste and food safety, while 63.6% of respondents had hardly ever had an unpleasant experience with the Halal status of the fresh/chilled beef they had purchased from a retail store. Respondents were found to have hardly ever had an unpleasant experience with fresh/chilled beef that promised to protect the environment (62.3%), provide good health and nutrition (61.6%), enhance the welfare of farm workers (61.6%) or provide a good texture/mouth feel (60.8%). Over half of the respondents interviewed (55.3%) had never or only very occasionally had an unsatisfactory experience with the purchase of fresh/chilled beef that did not deliver good value for money.

On those occasions where respondents were dissatisfied with their purchase of fresh/chilled beef, their major complaints related to the perceived lack of freshness (Table 10.34).

For some 36.3% of the respondents, the fresh/chilled beef available in the market was considered too expensive. Other reasons for dissatisfaction were primarily related to the physical condition of the meat: sometimes it was smelly (34.1%), the texture was poor (28.1%), the meat contained a lot of fat (24.4%), or the colour of the meat was pale (22.9%). Respondents were also dissatisfied when the fresh/chilled beef was displayed in an unclean area (17.0%), when it did not taste good (15.6%), and when the Halal logo was not displayed in the retail outlet (14.1%). Respondents were disappointed when the origin of the fresh/chilled beef

was unknown (9.6%), or the meat was believed to contain growth promotants, artificial colouring agents or preservatives (9.6%).

Table 10.34: Reasons for dissatisfaction with the quality of fresh/chilled beef

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Not fresh	57	20	13	4	1	95	70.4
Price	12	14	15	4	4	49	36.3
Smelly	20	11	8	2	5	46	34.1
Bad texture	10	13	4	5	6	38	28.1
Contains a lot of fat	6	9	12	4	2	33	24.4
Pale colour	7	12	6	5	1	31	22.9
Not clean	3	7	6	7		23	17.0
Taste	7	5	1	7	1	21	15.6
Halal certificate not displayed	9	3	1	2	4	19	14.1
The origin of the meat is unknown	4	1	3	3	2	13	9.6
Contains growth promotants/colouring/preservatives		5	4	4		13	9.6
Packaging		2	1	2		5	3.7
Size		2			1	3	2.2
Unfriendly vendors /No cut and clean service available			1	2		3	2.2
Not kept in chilled display area		1	1			2	1.5
No label			1	1		2	1.5
Wastage			1			1	0.7
	135						

10.4 General view of fresh/chilled meat purchased

This section seeks to: (1) identify the extent to which consumers' expectations are fulfilled upon consumption of the product; and (2) to identify the extent to which consumers adjust their expectations in response to their dissatisfaction.

The results presented to date for both fresh/chilled chicken and fresh/chilled beef reveal that respondents generally experience some dissatisfaction with the quality of the fresh/chilled meat they have purchased but only on an occasional basis. When respondents are dissatisfied, most hold themselves responsible for their poor choice and suggest that they will be more selective on the next occasion that they purchase fresh/chilled meat (Table 10.35).

Table 10.35: What respondents do when dissatisfied with quality of fresh/chilled meat purchased from a retail store

	Mean	SD
I am more selective the next time I buy	5.69[a]	0.72
I am always satisfied with my purchase	4.84[b]	1.13
I inform/complain to the seller	4.79[b]	1.32
I change shops	4.76[b]	1.23
I return it to the shop	4.34[b]	1.53
I change brands	4.26[c]	1.59
I purchase less	3.98[d]	1.68
I throw them out	3.88[d]	1.81
I stop buying	3.81[d]	1.82
I just eat it/ cook it	2.21[e]	1.57
I do nothing	1.99[e]	1.51

where 1 is "I disagree a lot" and 6 is "I agree a lot"
those items with the same superscript are not significantly different at p = 0.05

Besides blaming themselves, some respondents indicated that they would complain to the vendor, purchase a similar product from another shop or return the meat to the retailer. Very few respondents indicated that they would do nothing.

With regard to food safety issues, most respondents were relatively confident that the fresh/chilled meat they had purchased was safe to eat (Table 10.36).

Table 10.36: Confidence level

	Mean	SD
How confident are you that the fresh/chilled meat that you consume are safe to eat	5.08	0.89

where 1 is "Not at all confident" and 6 is "Very confident"

More than one half of the respondents indicated that they would be confident that the product was safe to eat if it was guaranteed to be Halal (52.8%) (Table 10.37).

Freshness (38.9%) and cleanliness (37.4%) were the next most frequently cited variables that implied the meat was safe to eat. The label or brand (20.1%) and trusted vendors (18.9%) provided additional assurances. Furthermore, respondents could rely on the smell (16.9%) and colour (14.9%) of the meat to reassure themselves.

Table 10.37: Factors which lead respondents to conclude that the fresh/chilled meat purchased were safe or not safe to eat

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Halal	80	26	10	14	4	134	52.8
Fresh	26	29	32	8	4	99	38.9
Cleanliness	13	34	32	11	5	95	37.4
Label/brand	17	13	13	6	2	51	20.1
Vendors – friendly and knowledgeable	22	11	9	3	3	48	18.9
Smell	11	10	7	12	3	43	16.9
Quality	4	20	4	5	6	39	15.4
The way the chicken/cattle is being slaughtered	8	13	8	6	2	37	14.6
Colour	8	6	14	6	3	37	14.6
Freedom from chemicals/ preservative	7	5	3	9	8	32	12.6
A prestige shop	9	11	4	5	3	32	12.6
The texture of the meat at point of sale	3	9	6	8	4	30	11.8
The origin of the meat is known	7	7	8	2	2	26	10.2
I am confident with my choice	9	7	3	3		22	8.7
Organic	8	3	1	1	2	15	5.9
Taste	6	4	2	1		13	5.1
How chicken/cattle is raised is unknown	3	5	2	1		11	4.3
Nicely packed	2	4	3	2		11	4.3
Chilled storage is available		1	4	4		9	3.5
News from newspaper/Internet/ friends	4	3	2			9	3.5
No choice	2	2	1		1	6	2.4
Price			2	1	3	6	2.4
Near my house	3				1	4	1.6
I need to be more careful	2					2	0.8
I change menus					1	1	0.4
	254						

Most respondents were very confident with how the Malaysian government was managing Halal food requirements (Table 10.38).

Similarly, most respondents were very satisfied in the way the Malaysian government managed issues such as the country-of-origin, labelling foods that had been produced in a sustainable manner, organically produced food, fair trade, functional foods and probiotics and animal welfare. However, they were less

confident about the way in which the Malaysian government was managing chemical residues in food.

Table 10.38: Confidence level how Malaysian government manages the following

	Mean	SD
Halal	5.10[a]	1.04
Country-of-origin	4.42[b]	1.08
Sustainable production	4.22[b]	1.15
Organically produced food	4.18[b]	1.21
Fair trade	4.02[b]	1.21
Functional foods/probiotics	4.00[b]	1.17
Animal welfare	3.91[b]	1.22
Recycling packaging	3.82[c]	1.29
Conservation biodiversity	3.79[c]	1.18
Hormones, antibiotics and growth promotants	3.60[d]	1.33
Waste management	3.58[d]	1.24
Water pollution	3.56[d]	1.26
Microbial contamination	3.37[e]	1.31
Genetically modified fruit and vegetables	3.28[f]	1.34
Chemical residues	3.15[g]	1.42

where 1 is "Not at all confident" and 6 is "Very confident"
those items with the same superscript are not significantly different at p = 0.05

Most respondents (86.6%) indicated that at some point in time they had avoided or boycotted a particular food product due to food safety concerns (Table 10.39).

Table 10.39: Avoided or boycotted a particular food product due to food safety

	N	%
Yes	220	86.6
No	34	13.4
	254	

For most respondents (65.3%), the boycott on a particular food product was only on a temporary basis (Table 10.40).

Table 10.40: Methods of boycotting

	N	%
Temporary	124	65.3
Permanent	66	34.7
	190	

However, some 34.7% of respondents indicated that their decision to boycott a particular food could be permanent if it could be demonstrated that the food was not safe to consume.

Not expectedly, the main reason for boycotting a particular food product was the respondents concern about either food safety (22.9%) or the failure of the product to meet Halal requirements (22.5%) (Table 10.41).

Table 10.41: Reasons for boycotting

	N	%
Until proven safe to eat	72	22.9
Halal issues	71	22.5
Seasonal disease: bird flu, mad cow disease, hand and mouth disease, SARS.	33	10.5
Current issues in newspaper, television	27	8.6
Too expensive	24	7.6
Quality of the product	22	6.9
Clean	21	6.7
Health/well-being	17	5.4
Origin of the food	13	4.1
China products	12	3.8
Government instruction	3	0.9
	315	

Other reasons cited by respondents to avoid or to boycott particular food products included global pandemics such as bird flu, mad cow disease and SARS (10.5%) or other food safety incidents as frequently reported by the media (8.6%). A few respondents felt a need to boycott a particular food product when they thought that the price was too high (7.6%).

10.5 Review

The analysis demonstrated that the consumption of fresh/chilled chicken in the Klang Valley was higher than fresh/chilled beef. Furthermore, respondents purchased fresh/chilled chicken more frequently than fresh/chilled beef. This result concurs with the FAO (2007), who demonstrated that in 2003, the per capita consumption of poultry in Malaysia was 33.8 kg compared to 5.8 kg for beef. In 2006, the USDA acknowledged that Malaysia had one of the highest per capita

consumption rates in the world for chicken (Malaysia Poultry and Products Annual 2006). Norimah et al. (2008) reported that chicken meat was among the top 10 foods consumed weekly by Malaysians. According to Tey et al. (2008a), the motives behind the high per capita consumption of poultry relative to beef were: (1) the lower price of poultry relative to other meat; (2) poultry is consumed by most Malaysians irrespective of religious and ethnic/affiliations; and (3) consumers increasing concerns about health. On the other hand, the frequency of purchasing beef increased during the festive seasons. Pride (n.d.) revealed that there was a strong demand for beef during the festive seasons in Malaysia.

Given that chicken are considerably smaller than cattle, there are differences in the preferred forms in which respondents most often purchase the two products. The analysis indicated that whole dressed chicken was the most preferred by consumers, followed by smaller portions such as chicken drumsticks and chicken breast. Since it is unrealistic for consumers to purchase and to transport a whole cattle carcass from a retail store, portions such as topside and beef cubes were those most often purchased by consumers. Although different cuts were available to meet the differing ways in which consumers intended to use the product, the cuts were priced differently (Tey et al. 2008a). Similarly, Othman et al. (2009) reported that boneless chicken meat was more highly priced.

The methods that respondents used to cook chicken and beef were very similar (fried, soup, curry, roasted or grilled). However, meat products have differences in the texture, tenderness and taste. Kennedy et al. (2004) and Brunton (2009) described chicken as versatile, quick and easy to prepare and cook. As for the purchase of fresh/chilled beef, consumers preferences for slight marbling, a lot of marbling or no marbling depended on the manner in which the respondent intended to cook the meat and which cuts were available (Egan et al. 2001). Goldman and Hino (2005) demonstrated how the intended method of cooking influenced the variables utilised by consumers to determine the quality of the meat they purchased.

In their decision to purchase both fresh/chilled chicken and beef, the top four most frequently cited variables (freshness, Halal, cleanliness and price) were similar. Freshness was closely related to product appearance, which subsequently emerged

as the most important factor influencing the decision to purchase fresh/chilled chicken (Kennedy et al. 2004; Bonne and Verbeke 2006). Grunert (1997), McCarthy and O'Reilley (1999), Becker (2000) and Bonne and Verbeke (2006) found that freshness was among the most important quality attributes of beef. Freshness of the meat was mainly judged by the colour (McCarthy and O'Reilley 1999; Kennedy et al. 2004). Odour was also an important indicator of freshness of the meat. However, when consumers were unable to use smell to judge freshness at the point of purchase, they must rely entirely on visual cues (Kennedy et al. 2004).

The Halal status of the meat was the next most frequently cited attribute mentioned by respondents as being influential in their decision to purchase fresh/chilled meat. Similar findings were presented by Bonne and Verbeke (2006), who identified the role of religion in the consumption of fresh/chilled meat. For fresh/chilled meat to be guaranteed Halal, it was closely related to the method of slaughter (a credence attribute) and the presence of an Halal certificate or label (an extrinsic cue). In the absence of an Halal label, trusting their preferred butcher at the point-of-purchase provided the desired assurances. Although the fresh/chilled meat available in most modern retail outlets was provided with a Halal quality label, several consumers were sceptical about purchasing chicken or beef from supermarkets.

Cleanliness and price were the other variables most frequently mentioned by respondents as influencing their decision to purchase fresh/chilled meat in a retail outlet. Ahmed (2008) required respondents to compare hygiene, price and quality between modern retailers and the traditional marketing channels when purchasing meat. The results indicated that modern retailers were more hygienic and offered better quality meat, but they were perceived to be more expensive. The issue of cleanliness was raised by consumers in Belgium, claiming that their preferred butcher was not hygienic (Bonne and Verbeke 2006). In purchasing meat, Japanese consumers were found to be more price conscious and utilised price as an important indicator of quality (Egan et al. 2001).

Several other credence attributes which included freedom from disease and freedom from chemicals and growth promotants were the least cited variables by respondents in their decision to purchase both meat products. McEachern and

Schroder (2002) revealed that consumers' meat choice criteria were based on tangible criteria such as freshness, cleanliness and price, rather than intangible characteristics such as animal welfare and the use of additives in meat production.

Although the country-of-origin of the fresh/chilled chicken they intended to purchase was infrequently cited by respondents, respondents were more concerned about where the fresh/chilled beef they intended to purchase had come from. Tey et al. (2008a) reported that besides price and the availability of different cuts, Malaysian consumers have to consider the origin of the meat in their decision to purchase beef as they were able to choose beef that was locally raised, imported beef from Australia, America and India, or hybrid meat (imported cattle raised locally).

A total of eleven variables were identified to be of equal importance to respondents in their decision to purchase both fresh/chilled chicken or beef (Table 10.42)

Table 10.42: Importance of variables influencing respondents' decision to purchase fresh/chilled meat

Fresh/chilled chicken	Fresh/chilled beef
Appropriately slaughtered (Halal)	Appropriately slaughtered (Halal)
Freshness	Halal certificate
Halal certificate	Freshness
Smell/odour	Clean/no flies
Clean/no flies	Smell/odour
Flesh colour	Flesh colour
Skin colour	Quality assurance label
Quality assurance label	Competitive price
Value for money	Value for money
Competitive price	Freedom from chemicals/growth promotants
Freedom from chemicals/growth promotants	Freedom from antibiotics

Variables were grouped under themes which included Halal (appropriate slaughter and Halal certificate), the physical appearance of the meat (freshness, smell/odour, clean/no flies, flesh colour), extrinsic indicators (quality assurance label, competitive price and value for money), and the safety of the meat (freedom from chemicals/growth promotants). The only differences identified between the two meat products was skin colour, which was considered to be an important variable

for respondents in their decision to purchase fresh/chilled chicken and freedom from antibiotics for beef.

In qualitative research, Kennedy et al. (2004) demonstrated the importance of skin colour to respondents in their decision to purchase fresh chicken. The colour of the skin should be bright pink rather than dull brown if it is to be attractive to consumers. Similarly, beef that was considered to be free from antibiotics was considered to be more influential for respondents in their decision to purchase fresh/chilled beef. This was surprising, for Khor (n.d.) reported that 51.0% of the chicken sold in Malaysia contained cancer-causing nitrofuran. Similarly, the Ministry of Health found that half of the chicken samples bought from various towns and cities across Malaysia contained nitrofuran at levels 4,000 times higher than the Veterinary Department's safe level. Nik Anis (2009) reported that occasionally Malaysia imports chicken meat from countries such as China to ensure enough supply for the Chinese New Year. Apparently, consumers have no need to worry, for the two plants in Shandong, China, are regularly inspected by the Department of Veterinary Services and JAKIM to ensure that their operations are compliant with Halal and food safety requirements.

Prepacked chicken and beef was one of the least important variables influencing the respondents' decision to purchase meat in a retail store. These results were consistent with the preliminary findings from the focus group discussions where respondents preferred to purchase meat that was not prepacked. According to Resurreccion (2003), prepacked meats are value-added products. While it represents convenience in meeting the demands of time-poor consumers, shoppers in Malaysia still prefer to touch the meat before purchase (Zinkhan et al. 1999; Hsu and Chang 2002).

Principal component analysis identified four constructs which influenced respondents' decision to purchase fresh/chilled chicken in a retail store and five constructs for fresh/chilled beef (Table 10.43).

Table 10.43: Factors influencing respondents decision to purchase fresh/chilled meat

Fresh/chilled chicken	Fresh/chilled beef
Physical appearance and Halal requirements Price and value Poultry production	Intrinsic cues of the product and Halal Price and value Cattle production Functional quality

As a beef carcass is very different from a chicken carcass, an additional construct, functional quality, emerged with regard to the purchase of fresh/chilled beef. The importance of Halal and criteria which described the physical appearance of the product were the two constructs highlighted as being the most important for respondents in their decision to purchase both fresh/chilled chicken and beef, followed by price and value, and the manner in which the animals had been raised.

Several agencies, including JAKIM, the Department of Standards Malaysia, the Institute of Islamic Understanding Malaysia and the Malaysian Institute and Industrial Research and Standard (SIRIM) have developed a comprehensive Halal food guideline known as MS1500:2004 (Talib et al. 2008). Under these guidelines, the concept of Halal is described in detail, according to the type of food involved. For poultry and meat products, Halal involves adopting appropriate methods of slaughter according to Islamic rules. According to Shafie and Othman (2006), the Islamic method of slaughtering must be performed by a Muslim, and the animal must be from that group of animals Muslims are allowed to eat. Additionally, the animal must be alive at the time of slaughter, slaughter must be done with a sharp device, and the animal's respiratory tract, oesophagus and jugular vein must be severed. The concept of Halal also covers the storage, display and preparation process, where Halal food should not be stored together with non-Halal food, and hygiene, sanitation and food safety, which includes aspects of personal hygiene, clothing, equipment and the working premises for processing the food (Department of Standards Malaysia 2004).

In ensuring that the fresh/chilled meat was Halal, respondents highlighted the need to have a Halal logo, label or certificate. Shafie and Othman (2006) revealed that a Halal label and certificate was used to inform and to reassure consumers that the

food product was Halal. Without the presence of these value-added attributes, there may be some doubt that the fresh/chilled meat available from a retail store was Halal. However, many challenges were raised by consumers and food producers as to the inconsistency of the slaughtering method, the use and abuse of the Halal label, expired Halal certificates, unhygienic processing premises, and the lack of enforcement by authorities to ensure that the food was Halal (Shafie and Othman 2006; Talib et al. 2008).

The importance of examining the intrinsic cues or the physical attributes of the meat, the smell, cleanliness and flesh colour were other factors which were as equally important to respondents in their decision to purchase fresh/chilled meat products in a retail store. Resurreccion (2003) confirmed that European consumers were heavily influenced by the appearance (fat content and colour of the meat) in their decision to purchase. de Carlos et al. (2005) described the intrinsic cues as the cut, colour, marbling, fat content and fat rim. Krystallis and Arvanitoyannis (2006) suggested that consumers described the quality of meat by judging its freshness, leanness and bright red colour.

Again, because of significant differences in the product form, skin colour was found to be an important intrinsic cue for chicken meat, but it did not appear to influence the respondents decision to purchase fresh/chilled beef. However, Kennedy et al. (2005) investigated how the preferences for poultry skin colour varied across regions and cultures. According to Fletcher (1999), European consumers prefer poultry meat with less colour, such as a pale or pinkish colour, compared to consumers from the United States. Sunde (1992) confirmed that consumers in the United States preferred a yellowish broiler skin and meat, which signified superior quality and freshness, and was an indicator of the bird's health.

The cost of purchasing fresh/chilled chicken or beef was important to most respondents. Price appeared to be an important cue when consumers did not possess enough information about the intrinsic quality (Acebron and Dopico 2000). However, this study did not intend to measure any association between price and respondents perceptions of meat quality. Respondents were not required to specify the price they normally paid to purchase either or both products. Nevertheless, price

did have some influence on the respondents' decision to purchase fresh/chilled meat. The price of both meats fluctuates throughout the year. Both meats are much more expensive during the festive seasons. For example, standard chicken, super chicken, local beef and imported buffalo meat are among the 17 items included in the price control regulations implemented by the Malaysian government during the major festive seasons such as Eid, Chinese New Year and Deeepavali (Price control in Malaysia for Chinese New Year 2006). Due to the high price of fresh/chilled beef, most respondents associate the consumption of beef with special occasions such as family gatherings or wedding feasts.

To compare between both meat products, Brunton (2009) indicated that the imagery of chicken was centred on value for money, a routine purchase and appeal among children. Furthermore, the reasonable price of chicken meat motivates consumers to purchase more chicken over other meats. Ritson and Hutchins (1991) [cited in McCarthy et al. (2003)] report that the consumption of beef is expected to increase with an increase in household income. This suggests that beef is a luxury product. By comparing beef with other meats like chicken and pork, beef did not represent good value for money as it was considered "expensive" (McCarthy et al. 2003).

In the purchase of fresh/chilled meat, respondents showed little concern towards the manner in which the poultry and cattle had been raised. This finding concurred with research conducted by Idrus [cited in Azhari (2010)] which revealed that Malaysians' awareness of livestock welfare was practically zero. In most developing countries, including Malaysia, the government gives priority towards the provision of sufficient food to feed the population, rather than to concern itself with animal welfare. Even in Scotland, McEachern and Schroder (2002) demonstrated that consumers were more concerned about price and product appearance, rather than production and ethical matters. In Malaysia, very little information is available with regards to how and where the chicken and cattle were raised, although it was reported earlier that respondents have shown their desire to learn more. In the Ninth Malaysia Plan (2006), it was reported that the usage of chemicals and hazardous substances have increased in the agricultural sector (Ahmad and Juhdi 2008). This may explain, in part, why respondents were more concerned about the usage of chemicals, growth promotants and antibiotics at the

farm level. Batt et al. (2006) reported that in Asia, information such as country-of-origin was perceived to be the most important information consumers required. In the absence of such product information, many consumers may choose to purchase their fresh/chilled meat from traditional markets where they rely heavily on the trust developed from their long-term relationships with vendors (Goldman and Hino 2005).

Vermeir and Verbeke (2004) [cited in Ahmad and Juhdi (2008)] report that consumers usually give priority to other factors such as health, rather than concerns towards the environment or benefits to society from the purchase of organic food products. Ahmad and Juhdi (2008) revealed that in Malaysia, relating organic food to consumers' attitudes towards the environment was still relatively new and very few consumers were aware of this. Furthermore, very few consumers had expressed any desire to support more sustainable production. Price and affordability were among the reasons given by consumers for not purchasing products that were considered sustainable. Although some consumers expressed their concern for the environment and animal welfare, given that organic meats are more expensive than conventionally produced meat and the quality of the meat is similar, this may discourage consumers from purchasing ethically produced meat (McEachern and Schroder 2002). However, Krystallis et al. (2006) reported that the number of consumers who are willing to pay more for environmentally friendly products is increasing.

The availability of purchasing food that was organically grown was also another problem faced by consumers in Malaysia. According to Shamsudin and Selamat (2005), organic food is mainly sold in supermarkets and hypermarkets. These types of products are hardly ever found in traditional retail outlets. Similar findings were reported by Ahmad and Juhdi (2010), who demonstrated that the most common places to purchase organic food around the Klang Valley was from supermarkets and health food stores. Due to the non-availability of the product, Ahmad and Juhdi (2010) found that almost half of the respondents had no knowledge regarding the place of purchase for organic products.

Variables such as the label or brand, size and intended use, collectively described the "functional quality" of the fresh/chilled beef purchased. However, this was the least important construct for respondents in their decision to purchase fresh/chilled beef from a retail store. In the poultry sector, brand names are mainly associated with processed products such as chicken frankfurters, chicken burgers and nuggets, carrying well-known brand names such as Ayamas, Ayam Dindings and Farm's Best (Malaysia Poultry and Products Annual Overview 2005). Given that this study did not investigate consumers' attitudes toward processed and frozen chicken products, brand names were seldom mentioned as having any influence in the respondents' decision to purchase fresh/chilled chicken. As 70.0% of the chickens sold in Malaysia are through traditional markets (Malaysia Poultry and Products 2006), consumers preferred to purchase freshly slaughtered chicken rather than frozen chicken meat. Furthermore, chicken meat sold from the traditional market seldom carries any brand name. It is also uncommon to see prepacked chicken products in most traditional markets in Malaysia. Thus it comes as no surprise to find that this construct had little influence on the respondents' decision to purchase fresh/chilled chicken.

In contrast, consumers appreciate more the value of labelling for fresh/chilled beef. Roosen et al. (2001) reported that consumers in France and Germany placed a higher level of importance on brands as an indicator of the quality of the meat they intended to buy. Besides, the European Union (EU) recently enacted mandatory labelling which must indicate the place of production and slaughter to ensure the traceability of beef products. Grunert (1997) and Bredahl et al. (1998) revealed that consumers had difficulties forming quality expectations when purchasing unbranded meat. Although the amount of fat was an important cue, it was more commonly related to tenderness and taste. Grunert (2002) explained how brand was seen as a special quality cue that consumers could relate to based on their previous purchase experience. Given that there were many sources of fresh/chilled beef available in most retail outlets in Malaysia (Tey et al. 2008a), the importance of labelling or brand name, which indicated both the Halal status and the country-of-origin of the beef, were more influential in the respondents' decision to purchase.

Similar groups of variables were associated with different sets of desired values for both fresh/chilled chicken and beef. Freshness and the physical appearance of the meat, which included smell/odour, flesh colour and skin colour, clean/no flies and leanness, were among the variables most frequently cited by respondents as leading them to believe that the meat had a good taste and good texture (Table 10.44).

Although similarities existed between both meats, the discussion in the literature regarding how these groups of variables were related to the desired outcomes were found to be different for each meat. Similar to the findings of this study, Kennedy et al. (2004) discovered a relationship between colour (product appearance) and taste (sensory attributes) in the purchase of chicken. Kennedy et al. (2004) mentioned that in purchasing fresh/chilled chicken from a retail store, consumers utilised the intrinsic quality cues, which consisted of appearance, colour, freshness and leanness, to reflect other functional attributes (taste and healthfulness). For fresh/chilled beef, Carpenter et al. (2001) agreed that the colour of the meat, particularly bright red, positively affected consumers' likelihood of purchasing the product. However, beef colours, whether its red, purple or brown, did not affect in the taste of the meat. Carpenter et al. (2001) suggested that the consumers' eating satisfaction depended on other criteria such as tenderness, juiciness and flavour.

Table 10.44: Group of variables respondents relate with good taste and good texture/mouth feel

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food has a good taste	Freshness Physical appearance: smell/odour, flesh colour and skin colour Clean/no flies.	Freshness Physical appearance: flesh colour, smell/odour Physical appearance: skin colour, clean/no flies, leanness
The food has good texture/mouth feel	Freshness and physical appearance such as smell/odour, flesh colour, skin colour Organically grown, leanness, clean/no flies. Marbling, fat content	Freshness Physical appearance: flesh colour, smell/odour Physical appearance: fat content, leanness.

Egan et al. (2001) found that the taste of beef was related to smell and other variables such as fat and texture or juiciness of the meat. The relationship between

taste and smell was also reported by Liu et al. (2006), where consumers in China placed these two variables as among the most important attributes when purchasing beef. McCarthy et al. (2003) revealed how taste, appearance and sensory attributes contributed to the consumers' level of 'eating enjoyment'.

In relating the fat content of the meat with good taste and good texture/mouth feel, Glitsch (2000) found that the texture of the meat (tenderness) for beef was more important to consumers in European countries, rather than leanness. Egan et al. (2001) mentioned that the eating quality of beef may improve through marbling because of increased juiciness and flavour. Glitsch (2000) also demonstrated that leanness was more often associated with the purchase of chicken meat. Similarly, Kennedy et al. (2005) found that leanness (less fat content) was one of the main reasons why consumers chose chicken over red meats.

Extrinsic cues which were related to the country-of-origin and how the chicken/cattle were raised were among the variables least often cited by respondents as having any association with how the food tasted or the texture of the meat. These findings were similar to Northern (2000), who suggested that although both intrinsic cues and extrinsic cues were utilised by consumers in assessing the quality of meat, intrinsic cues such as colour and leanness were considered more reliable than extrinsic cues. These findings, however, were not consistent with those found by Kennedy et al. (2005). Kennedy et al. (2005) found that how the chicken was raised (wheat-fed chicken or corn-fed chicken) influenced the fattiness, tenderness and flavour of the meat. Given that the colour of corn-fed chicken is more yellowish, consumers perceived the chicken to be fatty (full of fat) and unappetising. In the purchase of fresh/chilled beef, Beriain et al. (2009) demonstrated how consumers in Spain found that US beef was juicier, tastier, more intensely flavoured and more tender than Spanish beef.

Freedom from chemicals/growth promotants and appropriate slaughter were the two most frequently cited variables which were believed to indicate that the fresh/chilled meat was safe to eat (Table 10.45).

Table 10.45: Group of variables respondents relate with food safety

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food is safe to eat	Freedom from chemicals/growth promotants Appropriately slaughtered (Halal) Freedom from antibiotics, Halal certificate, clean/no flies. Quality assurance label, freshness, organically grown	Appropriately slaughtered (Halal), freedom from chemicals/growth promotants Clean/no flies, freshness, freedom from antibiotics, Halal certificate. Quality assurance label, smell/odour, organically grown.

Issues relating to the usage of chemicals and growth hormones in both poultry and cattle production have raised concerns among Malaysian consumers. Aini (1990) reported that there was a heavy demand for village chicken, popularly known as *ayam kampong* in Malaysia. Aini (1990) mentioned that village chicken were breed in a traditional village-based system (free-range system) which required minimal resource input (natural feeding where chickens are free to find their own food and free from growth hormones). As a result of a more natural rearing system, Oh (1987) [cited in Aini (1990)] believed that the meat and eggs from these chickens was safer to eat and more tasty than commercial chicken meat. Shaharudin et al. (2010) confirmed that because non-organic chicken rearing involved the use of antibiotics, vaccines and growth promotants to accelerate the rate of maturity, it was unhealthy and unsafe for consumption. In responding to the consumers' concerns towards the usage of chemicals in raising chicken, a local company in Malaysia was reported to have replaced antibiotics with herbs in the chickens' diet (Asia's First Antibiotic-Free Eggs Using Herbs 2010).

For both meat products, freedom from any chemicals, growth promotants or antibiotics in poultry and cattle production was most often associated with organically grown meat. O'Donovan and McCarthy (2002) found that chicken was the most popular choice of organic meat. However, Fanatico (2008) summarised several research outputs that both agree and disagree with the relationship between food safety and organically grown chicken. Due to absence of any chemical substances, Heuer et al. (2001) [cited in Fanatico 2008] found higher levels of campylobacter bacteria in organic broilers compared to conventional broilers.

Farina and de Almeida (2003) identified that free-range, natural and organic chicken have a higher likelihood of contracting salmonella. In contrast, Lunangtongkum et al. (2006) [cited in Fanatico 2008] found that campylobacter bacteria were more resistant to organically raised chickens than to conventionally raised chicken. For beef, Cowan (1998) [cited in McCarthy et al. (2003)] reported that 70.0% of consumers in Ireland were concerned about the presence of hormones and BSE when purchasing beef. In contrast, Acevedo et al. (2006) reported how organic grass-fed beef was produced and never treated with hormones, antibiotics, pesticides and chemicals.

The appropriate method of slaughter, which determines the Halal status of the fresh/chilled meat, was also associated with food safety. In ensuring that the meat is Halal, the slaughtering method of the chicken and cattle is similar. With reference to the Halal food guideline, the slaughtering act shall sever the trachea, oesophagus, carotid arteries and jugular veins to hasten the bleeding and death of the animal (Department of Standards Malaysia 2004). Jonsson et al. (2002) found that Somali women in Sweden, relied heavily on the role of religion (consuming Halal slaughtered meat) as a way to ensure that the food was safe to eat. Bonne and Verbeke (2008a) indicated that Muslim consumers believed that Halal meat was not only more safe, but it was also more wholesome. According to Bonne and Verbeke (2006), the slaughter method according to Islamic rules provides meat that contains less blood and thus there is less likelihood of bacterial contamination. The concept of Halal itself guarantees that the food has been handled in a manner that is both safe and hygienic (Department of Standards Malaysia 2004; Talib et al. 2008). According to Shaharudin et al. (2010), non-Halal vaccines given to chickens are unsafe to consume, thus describing the relationship between food safety and Halal.

The association between food safety and Halal is not only demonstrated among Muslim consumers, but often utilised by other consumers who follow other religions. Berry (2008) reported that non-Muslim consumers from European countries are purchasing Halal food products due to the perception that these products are safer. Golnaz et al. (2010) agree that Halal products are being accepted by non-Muslim consumers because they believed that the products were more safe and healthy. Cutler (2007) mentioned that the production of food that is Halal

involves stricter food safety measures. As a result, many food operators intended to implement Halal to reach a wider market.

The physical appearance of the meat such as cleanliness and freshness was also an indicator that the meat was safe to eat. Similarly, freshness was also a major criteria in assessing the safety of beef, pork and chicken among European consumers (Glitsch 2000). Anklam and Battaglia (2001) found that consumers' expected high quality food to be fresh, good looking, nutritious, wholesome, tasty and most importantly to be safe. Consumers' only major concern was that there was no direct means to verify that the food was safe to eat.

When consumers make comparisons between the impact of fresh/chilled chicken and fresh/chilled beef on their health, several differences were detected. Yeung and Morris (2001) indicated that chicken meat was considered to be more healthy than other meat. Verbeke and Viaene (2000) believed that beef holds an image of being less healthy. Nevertheless, some respondents mentioned that they eat beef because of its high nutritional value (Van Wezemael 2010). As Brunton (2009) suggested, beef is considered a good source of iron and protein.

Despite the differences, respondents tended to associate similar variables with healthy and nutritious meat (Table 10.46).

Table 10.46: Group of variables respondents relate with healthy and nutrition

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food is healthy and nutritious	Freshness, freedom from chemicals/growth promotants Organically grown, clean/no flies Flesh colour, freedom from antibiotics, leanness, fat content	Freshness Freedom from chemicals/growth promotants, flesh colour, clean/no flies, freedom from antibiotics, organically grown, leanness Smell/odour, marbling/fat content, appropriately slaughtered, quality assurance label.

Freshness was the most frequently cited variable which indicated that fresh/chilled meat was healthy and nutritious. The quantitative findings verified the preliminary findings where participants from the focus group discussions mentioned that the freshness of the fresh/chilled meat purchased from a retail store would lead to a more healthy meal. In a similar study, Kennedy et al. (2004) found that most female respondents who have positive attitudes towards their health and body weight relate the freshness of chicken meat with healthy food. Van Wezemael et al. (2010) found that consumers have a greater preference for fresh beef compared to processed and packaged beef, because freshness signals the healthfulness of the meat. de Carlos et al. (2005) concluded that freshness, healthiness and nutritional value of the meat could only be established after consumption. Moreover, consumers may seek brand names or labels attached to the package to provide additional information about health quality. However, in Malaysia, this may be difficult as the preliminary findings revealed that the majority of consumers dislike purchasing pre-packed meat. Most of the fresh meat sold in traditional retail outlets is unbranded and unlabelled.

Beside freshness, the appearance of the meat such as flesh colour, leanness and fat content were also linked to the respondents concerns about health and nutrition. Freshness and fat content were the two most important criteria used by consumers in the United States to evaluate the healthfulness of meat (Oakes and Slotterback 2002). Anders and Moser (2010) demonstrated how the fat content in meat products is an important attribute for consumers who are health conscious in Canada. Kennedy et al. (2004) agreed that the fat content and flesh appearance represent the healthfulness of chicken meat. Because of the leanness of the meat and good health reputation, regular chicken was viewed as a complement to extra lean beef (Anders and Moser 2010). In the purchase of fresh/chilled beef, Van Wezemael (2010) provides two different views on the relationship between health and the leanness of the meat. Most respondents agreed that the leanness of the beef indicates healthiness on the basis that: (1) beef is lean meat and therefore healthful; (2) it is normal to have fat on beef; (3) some beef cuts are leaner than others, which determines the healthiness of the meat, and (4) the healthiness of the beef should not be examined only by the fat content; consumers should also consider what additives may have been added to the meat during production. Krystallis and

Arvanitoyannis (2006) considered the threat of chemical residues, growth promotants and antibiotics in the meat to be of more concern than the high fat content or the threat of microbial infection. Nevertheless, Van Wezemael (2010) reported that some respondents believed that the fat content was quite high in beef, therefore beef was considered unhealthy. Given the relationship between the fat content of meat and healthy eating, Anders and Moser (2010) suggested that it is up to retailers to strategise and position meat products (regular and extra lean meat) according to the consumers' preferences.

The way the poultry and cattle were raised (freedom from chemicals/growth promotants, freedom from antibiotics and organically grown) were associated with healthy and nutritious meat. Farina and de Almeida (2003) demonstrated the association between healthy meat and the method of production when consumers perceived that eating free-range, natural or organic chicken was considered more healthy given the absence of steroids and antibiotics. Clemens (2003) confirmed how chicken that was raised in a conducive environment and given fresh herbs may produce healthy and flavourful meat. According to Stefani et al. (2008), eating chicken was perceived as unhealthy due to the presence of growth hormones and antibiotics used in the rearing process. In Malaysia, Yeoh (2007) reported that the Nutrition Society in Malaysia (NSM) recommended that consumers eat less chicken in their daily diet to remain healthy. According to the Consumers Association of Penang (CAP) [cited in Yeoh 2007], chicken meat produced to meet the demand during festive seasons had a higher risk given that these poultry were given antibiotics and growth hormones to accelerate their growth. Consumers with allergies may be affected when eating meat that contained these types of chemicals. Bernues et al. (2003) found that consumers in Europe related the methods of animal production with their concerns about health, nutrition and the safety of the red meat they consumed. Van Wezemael (2010) suggested a few methods to improve the healthiness of beef: (1) appropriate feeding of the animals (feed the cattle grass instead of chemicals) and (2) appropriate cattle rearing (cattle should be free and not tied in barns). Van Wezemael (2010) added that a stressed animal can easily catch diseases which produced unhealthy meat. In contrast, Marreiros and Ness (2002) were unable to establish any relationship between the healthiness of Protected Designation of Origin (PDO) beef, although consumers perceived this

type of meat more positively as it provided assurances of the system and region of production.

Competitive price and value for money were strong indicators in determining that the fresh/chilled meat the respondent intended to purchase represented good value for money (Table 10.47).

Table 10.47: Group of variables respondents relate with value for money

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food represents value for money	Competitive price Value for money, freshness, size Quality assurance label, available as individual parts, intended use, clean/no flies.	Competitive price Freshness, value for money, quality assurance label, size Label/brand, appropriately slaughtered, available as individual parts, intended use, Halal certificate.

According to Grunert (2005), the concept of value for money is justified by relating quality and price together. Grunert (2005) further explained that consumers are only willing to pay the price for a piece of meat when the quality of the meat is perceived sufficient to the amount spent. Egan et al. (2001) found that the price of beef was important to Japanese consumers given that low priced beef was often associated with lower quality. By comparing between both meat products, chicken was perceived to bring more value to consumers due to the cheaper price of the meat. In Malaysia, although the prices vary between cuts, the price of chicken meat is relatively cheaper than beef (Tey et al 2008a; Veru 2010). However, with the increase in chicken prices and no action from the government to control prices, the Consumers Association of Subang and Shah Alam (CASSA) anticipated that chicken meat would only be available for consumers who could afford to purchase the meat. Being sold at a higher price may not represent good value, particularly for lower income consumers. Mangen and Burrell (2001) and McCarthy et al. (2003) demonstrated how beef was often perceived as a luxury food item. In Japan, Peterson and Chen (2005) found that consumers perceived imported beef (US beef and Australian beef) to be a luxury good. Due to the higher price, beef was perceived to offer poor value for money compared to other meats such as chicken and pork. As beef was purchased less often, McCarthy et al. (2003) indicated that

consumers may have less experience. Furthermore, given that the quality of beef is also more variable, with less experience, consumers may encounter greater dissatisfaction and thus less utility. Only when there is a drop in the price or income increases, is the consumption of beef likely to improve (Egan et al. 2001; McCarthy et al. 2003; Tey et al. 2008a). Tey et al. (2008a) demonstrated the relationship between price with value for money, where higher income earners in Malaysia favoured hybrid or imported beef which is much more expensive than domestic bred beef, but is perceived to represent better value.

The size and the availability of individual parts were often associated with meat that represented good value for money. Although being sold at a much more expensive price, younger respondents had a strong preference for chicken fillet breast because this portion was versatile and convenient (Kennedy et al. 2004). For them, it was more time consuming to cook a whole chicken which contained a lot of bones and they may lose a lot of meat. For this group of consumers, buying a whole chicken was wasteful and opposed to the concept of providing value for money. In a similar case, Unnevehr and Bard (1993) explained that different cuts of beef created different levels of utility. The purchase of these different cuts was highly dependent on the household size and income to produce a meal that was perceived to represent good value for money. According to Egan et al. (2001), consumers preferred lean steaks of medium to large size. Steaks with more fat and marbling were often offered at a much higher price. Verbeke et al. (2005) reported that respondents were aware that superior quality meat such as beef was more expensive. Nevertheless, they expressed their dissatisfaction and claimed that it was deceiving when the meat reduced in size after cooking.

The intended use of the meat was also associated with meat that brought good value for money. This finding corresponds with Kennedy et al. (2004), where respondents mentioned that they could create more dishes with chicken meat. Stefani et al. (2008) indicated that the purchase of chicken represented good value for money because of the popularity of the meat among the household members and the ease with which the meat could be combined with other ingredients. Brunton (2009) agreed, mentioning that chicken meat is known to be a versatile, quick and easy to prepare and consumers were able to produce a wide variety of meals. Chicken had a

good value image as the meat was more appealing among children and well accepted by the whole family. In contrast, red meat was commonly associated with a higher fat content (Kennedy et al. 2004). When preparing the meat, some parts of the meat may need to be trimmed. As a result of this, red meat may not represent good value for money.

Quality assurance labels and brands were perceived to influence perceptions of value. Walley et al. (1999) revealed how consumers valued quality assurance labels as an important indicator of meat quality. Consumers preferred to purchase meat products which were quality assured rather than meat which was not. Kim and Boyd (2004) confirmed a strong correlation between country-of-origin, branding and labelling, and Korean consumers' perceptions of beef products. Branding captures value by differentiating the product and by providing an assurance of quality to consumers. The country-of-origin of the meat was seen as an indicator of quality, dependability and value for money. In contrast, country-of-origin was perceived to have a weak relationship to the value of both meat products in Malaysia.

Meat products that were organically grown, free from chemicals, growth promotants and antibiotics were perceived by respondents to be better for the environment and worker welfare (Table 10.48).

Table 10.48: Group of variables respondents relate with food that has been produced in a way that is good for the environment and protects worker welfare

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food has been produced in a way that is good for the environment	Organically grown Freedom from chemicals/growth promotants, freedom from antibiotics Grown on local farms, raised in a humane way	Organically grown, freedom from chemicals/growth promotants Freedom from antibiotics, grown on local farms, raised in a humane way Freshness, Halal certificate
The food has been produce in a way that protects worker welfare	Grown on local farms Raised in a humane way, freedom from chemicals/growth promotants, organically grown, freedom from antibiotics	Grown on local farms, raised in a humane way Freedom from chemicals/growth promotants, organically grown.

This means that respondents associate the production method for rearing poultry and cattle with meat that has been produced in a way that is good for the environment and worker welfare. From the literature, the discussion with regards to organic meat and the differences in the production methods for both chicken and beef are not significant (O'Donovan and McCarthy 2002; McEachern and Schroder 2002; McEachern and Willock 2004; Von Borell and Sorensen 2004). Consequently, their impact can be discussed in a collective manner.

Von Borell and Sorensen (2004, p. 3) described organic livestock production as: (1) production methods based on ecological principles (meeting all health regulations, working in harmony with the environment, building biological diversity and fostering healthy soil and growing conditions); (2) animals raised without the use of toxic persistent pesticides, antibiotics and parasiticides; and (3) organic meat produced from farms that have been inspected and meet strict standards which utilise organic feed and are concerned about animal welfare (access to outdoors, fresh air and sunlight). Overall, organic livestock production is considered sustainable for consumers, for the workers involved in the farming system, for the environment and for the animals. Hermansen (2001) found that those consumers who preferred organic meat placed more importance on health aspects and ethical issues such as concern for the environment as motives for their decision to purchase. According to the Ministry of Food, Agriculture and Fisheries in Denmark [cited in Hermansen 2001], the environmental aspects have been dominant with organic livestock production in most European countries. McEachern and Willock (2004) described the "naturalness" of organically produced meat saying that: (1) organic farming is the best method of ensuring a sustainable future for farming; and (2) freedom from chemicals, because chemicals are dangerous for the farmer and animals. Castellini et al. (2008) mentioned that the development of organic and free-range poultry production is in response to consumers' concerns for environmental protection, animal welfare and production systems that progressively enhance the institutional environment.

Hermansen (2001) found that different consumer groups emphasised different motives when purchasing organic meat. While elderly consumers may purchase organic meat to gain a more healthy meal, younger consumers emphasise the

importance of protecting the environment. O'Donovan and McCarthy (2002) found that consumers were more concerned about their health, rather than the environment or concerns about pollution when purchasing organic meat. McEachern and Schroder (2002) demonstrated similar results, reporting that consumers main motivation for buying organic food was concern about food safety, followed by concerns for animal welfare and finally the environment. According to McEachern and Schroder (2002) and Castellini et al. (2008), consumers' preferences for intangible quality attributes such as individual health and safety, animal welfare, production aesthetics, pollution, biodiversity and rural sustainability are influenced by their knowledge, attitudes and values towards these attributes. Yiridoe et al. (2005) suggested that consumers may place more emphasis on their personal benefits such as health and food safety, rather than any other social and community benefits in the purchase of organically produced food.

While consumers may demonstrate their desire to protect the environment and express their concerns for other ethical issues, they often face challenges in aligning their beliefs and their actions. According to McEachern and Schroder (2002), although some "green" consumers support organic, the environment and fair trade, because of the higher price they have to pay to purchase these products, they are often unwilling to do so. Ahmad and Juhdi (2008) confirmed that Malaysian consumers possess the knowledge and awareness of sustainability, but most consumers were unwilling to purchase environmentally produced meat. In Malaysia, concerns for animal welfare by low income earners are almost non existent (Azhari 2010).

The physical attributes of the meat (freshness and cleanliness) and Halal (appropriate slaughter and Halal certificate) were least often cited by respondents as having any positive impact on the environment or worker welfare. Given that the production method involved credence quality attributes, consumers may not be able to identify whether the product was produced using organic or conventional methods even after consumption or repeated purchase (Yiridoe et al. 2005).

Not unexpectedly, respondents strongly believed that variables such as Halal certification, appropriate slaughter and a quality assurance label were more often associated with food that was guaranteed Halal (Table 10.49).

Table 10.49: Group of variables respondents relate with Halal

Desired outcomes	Fresh/chilled chicken	Fresh/chilled beef
The food is guaranteed Halal	Halal certificate, appropriately slaughtered Quality assurance label Country-of-origin, label/brand	Halal certificate, appropriately slaughtered Quality assurance label, country-of-origin Label/brand, grown on local farms

According to Grunert (2005), Halal is a credence quality attribute, which cannot be evaluated or ascertained by consumers, even after consuming the product. Thus it comes as no surprise to find that intrinsic cues such as freshness and skin colour, and extrinsic cues such as price were among the variables least often associated with the Halal status of the meat respondents intended to purchase.

Credence quality attributes must be clearly communicated to consumers through labelling (Bonne and Verbeke 2008b). Nevertheless, there have been a number of cases where a Halal logo attached to a piece of meat does not necessarily indicate that the product is Halal. *Berita Harian* reported that while cleaning a chicken, a family had some doubt as to the Halal status of the meat they had bought from a famous hypermarket in Penang which displayed a JAKIM Halal logo and claimed to be Halal (*Peniaga saman Tesco RM1.6 juta kerana jual ayam tidak Halal* 2010). Several investigations was made by the Penang Islamic Affairs Department which confirmed that the chicken was not slaughtered according to Islamic rulings and was not suitable for consumption by Muslim consumers. According to the Muslim Consumers Association of Malaysia (PPIM), the misuse of Halal certification and the Halal logo is not new as a result of poor monitoring by JAKIM (*Syarikat Ayam Dinding disaman RM101 juta, PPIM mahu Akta Halal digubal segera* n.d.). Nevertheless, the Trade Description Act 1970 is currently being amended where businesses may be fined between RM500,000 and up to RM1 million or five to ten years imprisonment if found guilty of abusing the Halal certification and logo issued by JAKIM (*Denda RM1 juta ulangi salah guna sijil, logo Halal* 2010).

Notwithstanding, consumers have expressed their doubts with regard to the Halal status of beef imported from foreign countries, given that these abattoirs are not inspected by JAKIM regularly (*Pastikan status Halal, khasiat daging kerbau India* 2010).

The appropriate slaughtering method according to Islamic rules was also associated with fresh/chilled meat that was guaranteed Halal. Pointing and Teinaz (2004) find that meat which has not been slaughtered according to Islamic requirements cannot be considered to be Halal. According to the Muslim Council of Britain (MCB), 90.0% of the meat and poultry in the UK which is claimed to be Halal was not slaughtered according to Muslim rulings (Ahmed 2008). A similar case was reported in Malaysia where JAKIM had to stop the operation of a chicken company because it was found not to be slaughtering the chickens accordingly; (1) some chickens were being slaughtered twice; (2) some chickens were found to be dead before slaughtering and (3) some veins of the chickens were still attached and not severed (*Syarikat Ayam Dinding disaman RM101 juta, PPIM mahu Akta Halal digubal segera* n.d.). Recently, JAKIM conducted an unexpected inspection of three slaughtering houses in Chow Kit market which distribute chickens to supermarkets and traditional markets around the Klang Valley (Md Denin 2010). Unfortunately, JAKIM found that the slaughtering methods were often inappropriate given that; (1) some veins were still attached; (2) blunt knives were used; and (3) the person in charge of slaughtering the chicken did not have a certificate from JAKIM.

The top three desired values were similarly ranked by respondents in their decision to purchase both meat products (Table 10.50).

Table 10.50: Importance of criteria respondents use in their decision to purchase fresh/chilled meat in a retail store

Fresh/chilled chicken	Fresh/chilled beef
The food is guaranteed Halal. The food is safe to eat. The food is healthy and nutritious.	The food is guaranteed Halal. The food is safe to eat. The food is healthy and nutritious. The food has a good taste. The food has good texture/mouth feel.

Respondents however considered two additional desired values (taste and good texture) in their decision to purchase fresh/chilled beef from a retail outlet. The findings correspond with Savell et al. (1989), who clearly indicated that beef is consumed because people like the taste of the meat. Umberger et al. (2000) confirmed that taste (flavour) was an important factor influencing consumers' decision to purchase fresh/chilled beef products. In comparisons between a variety of different meats (beef, chicken, pork, lamb and ostrich), the flavour of both beef and ostrich were rated highly (Kubberod et al. 2002). Goodson et al. (2002) segmented consumers according to their positive attitudes towards beef. The 'Beef Loyals' gave the highest score for the flavour of the meat when rating the taste of beef steaks compared to the 'Budget Rotators' (consumers whose meat preferences were driven by budget) and the 'Variety Rotators' (where consumers preferences for beef and chicken were equally positive). Kubberod et al. (2002) tried to segment the consumers according to the relation between the type of meat, taste and gender. Males had a stronger preference towards consuming beef because of the hedonic pleasure of eating red meat. Although male consumers were found to have placed more importance on the sensory attributes (taste and tenderness) compared to females, Verbeke (2001) confirmed that the scores were similar for beef and chicken in terms of the taste and quality of the meat.

The findings suggest that the taste of chicken was less important to respondents when purchasing fresh/chilled chicken as compared to the purchase of fresh/chilled beef. Yeung and Morris (2001) reported that many respondents believed that chicken meat was tasteless, flat and had little flavour compared to other meats. These respondents further explained that intensive farming methods, which require chickens to be sold prematurely, where among the reasons why chicken meat had less taste. Kennedy et al. (2004) also reported that chicken meat was perceived to be tasteless. Kubberod et al. (2002) reported that chicken had the lowest taste ratings compared to other meat products.

Good texture and mouth feel was also considered an important criteria which impacted on respondents' decision to purchase fresh/chilled beef. According to Savell et al. (1989), texture was further described as the tenderness and juiciness of the meat. Glitsch (2000) found that the texture of meat was an important attribute

which described the “eating quality” of beef. Goodson et al. (2002) indicated that consumers may experience different levels of tenderness and juiciness for beef, which was largely determined by the cooking method (either the meat is grilled, broiled, fried or braised). According to the 1995 National Beef Quality Audit (USDA/ERS 2002) [cited in Resurreccion 2003], one in four steaks was claimed to be “too tough to chew”. Savell et al. (1989) mentioned that taste, texture and leanness of beef have a unique association with the fat content. A consumer with a strong preference for lean meat will have difficulty in finding a piece of meat that has a good texture, is tender and juicy (Resurreccion 2003). As a result of dissatisfaction with the poor taste, tenderness and juiciness of the meat, Umberger et al. (2000) reported that 46.0% of consumers had stopped purchasing beef.

The analysis revealed that respondents were most often displeased when it came to ensuring that the fresh/chilled chicken and fresh/chilled beef was Halal, safe, healthy and nutritious to eat (Table 10.51).

Table 10.51: Occasions where respondents felt unhappy with the quality of fresh/chilled meat purchased with regard to the following desired outcomes

Fresh/chilled chicken	Fresh/chilled beef
The food is not guaranteed Halal.	The food is not guaranteed Halal.
The food is unsafe to eat.	The food is unsafe to eat.
The food is unhealthy and not nutritious.	The food is unhealthy and not nutritious.
The food does not represent value for money.	The food does not represent value for money.
The food has a poor texture/mouth feel.	The food has a poor texture/mouth feel.
The food has a bad taste.	The food has a bad taste.
The food has not been produced in a way that protects worker welfare.	The food has not been produced in a way that protects worker welfare.
The food has not been produced in a way that is good for the environment.	The food has not been produced in a way that is good for the environment.

These desired outcomes involved process-related qualities (credence qualities) which may be difficult to confirm even after consumption. Grunert (2005) described that after purchase, consumers may have been exposed to new information or forgotten the information gathered, which then questions the credibility of the information processed before the purchase. At this point in time, consumers may remove or change a previous quality perception that they had about the product.

Verbeke and Vackier (2004) segmented consumers as “concerned meat consumers” and “cautious meat lovers”. “Concerned meat consumers” placed extremely high importance on meat safety, strongly reduced their meat consumption and purchased less but better quality meat. “Cautious meat lovers” purchased meat on a strong foundation that it was healthy for their children. In Malaysia, beside the supermarkets and hypermarkets, fresh meat was accessible from the traditional markets. As described by Bakar and Vathsala (2005), fresh meat left on counters at room temperature may enhance the growth of salmonella and other food borne pathogens.

More than half of the respondents were reasonably satisfied with the quality of the fresh/chilled meat purchased from a retail store. This may also indicate that respondents are confident with the quality of the fresh/chilled meat available in Malaysia. Particularly in the case of chicken, Malaysian consumers should have confidence in the Halal status of the meat, given that the majority of the chicken is produced locally (*Penternak disaran eksport ayam elak lebihan pengeluaran* 2002). According to Che Man et al. (2007), due to its strict Halal certification procedures, Malaysia has established credibility and has thus gained consumers’ confidence in terms of providing food that is guaranteed Halal. Given that the Malaysian standard guidelines for Halal food are being implemented together with MS1480 and MS1514, which includes food safety and food hygiene, Zakaria (2008) believes that this will further enhance consumers’ level of confidence towards Halal and food safety. During the bird flu crisis which affected the poultry industry, the Department of Veterinary Services (DVS) assured consumers that chicken meat was safe to eat given that: (1) chicken was being supplied by local farmers; and (2) the government had banned chicken imports from Thailand (Ismail 2004). To further enhance food safety, Selamat (2007) mentioned that DVS had also introduced an accreditation programme known as the Veterinary Health Mark (VHM). Any food processing plant which involves meat and poultry that complies with the minimum standard of hygiene, sanitation, quality assurance and food safety systems shall be rewarded with the VHM logo. According to Selamat (2007), products carrying a VHM logo improve consumers’ confidence towards Malaysian meat products.

A cross-tabulation was performed to identify which group of respondents (according to the preferred place of purchase) were any more or less dissatisfied with the desired outcomes. The results found a greater variance between individuals, rather than between the place of purchase. In other words, respondents were either satisfied or dissatisfied with the quality of fresh/chilled meat they had purchased. Their satisfaction or dissatisfaction was more related to the product rather than the place of purchase.

The three main reasons consumers gave for being dissatisfied with their purchase of fresh/chilled meat were not fresh, having an unpleasant smell and high price. These were similar for both fresh/chilled chicken and fresh/chilled beef (Table 10.52).

Table 10.52: Reasons for dissatisfaction with the quality of fresh/chilled meat

Fresh/chilled chicken	Fresh/chilled beef
Not fresh	Not fresh
Smelly	Price
Price	Smelly, physical appearance: texture, contained a lot of fat, colour
Taste, physical appearance: colour, texture, cleanliness	Cleanliness, taste, not Halal guaranteed
Not Halal guaranteed	Origin is unknown, contained growth promotants

The reasons for respondents' dissatisfaction may coincide with the variables respondents used in their decision to purchase fresh/chilled meat. Poor taste was mentioned by respondents as an indicator of dissatisfaction with their purchase of fresh/chilled meat from a retail store. This finding concurs with Umberger et al. (2000), who demonstrated how taste and flavour were indicative of consumer satisfaction for fresh beef products. Moreover, respondents also mentioned that they were dissatisfied with the physical appearance of the meat. These findings concur with Becker (2000), who associated cues such as freshness, smell, colour, texture, tenderness, juiciness and flavour with consumers' experience quality attributes or eating quality. Becker (2000) added that some cues have a higher predictive value in determining the experience quality attributes. This may explain why variables such as freshness and smell are so important to the consumer. According to Lister (1996, p.194) [cited in McCarthy et al. 2003], meat is eaten to be enjoyed. Verbeke and Vackier (2004) and McEachern and Seaman (2005) suggest that consumers

who enjoy the pleasure of eating meat are well experienced in their purchase of meat and were not greatly concerned about issues that may reduce their “eating enjoyment”.

Consumers also expressed their dissatisfaction over the price of fresh/chilled meat that was available from retail markets. The price of fresh/chilled chicken was found to be more competitive compared to the price for fresh/chilled beef. However, consumers’ dissatisfaction over the increasing price of chicken has been more frequently reported in the newspaper, compared to their dissatisfaction over the price of beef (Amin and Razali 2010; Yatim et al. 2010; Zolkiply 2010). The findings may indicate that Malaysian consumers are more price conscious in their decision to purchase fresh/chilled meat. Menkhaus et al. (1993) [cited in Resurreccion 2003] indicated that consumers were concerned with regards to the cost of purchasing beef, where they claimed to be too expensive. Meat offered at a much lower price was found to be a critical factor for Italians and English (Concoran et al. 2001). In contrast, McCarthy et al. (2003) demonstrated that price was not an important issue for Irish consumers when thinking about beef. Irish consumers were more responsive towards health and safety and the taste of the meat.

11. A description of the respondents' purchase of fresh fruit and vegetables

11.1 Chapter Outline

Respondents' purchases of fresh fruit and vegetables are described in this chapter. The different purchasing patterns used by respondents will be discussed in three separate sections; Part One for the purchase of fresh potatoes, Part Two for the purchase of fresh spinach and Part Three for the purchase of fresh apples. The next section reports on how respondents handle dissatisfaction with the quality of the fresh fruit and vegetables they have purchased. Several issues regarding the respondents' experiences with food safety in the fresh produce industry will then be presented. The final section concludes by comparing respondents shopping behaviour according to their purchase of fresh fruit and vegetables from a retail store.

11.2 Part One: The purchase of fresh potatoes

Some 30.7% of respondents purchased fresh potatoes one time every two weeks, followed by one time per month (28.9%) and one time per week (24.1%) (Table 11.1).

Table 11.1: Frequency of purchasing fresh potatoes

	N	%
Everyday	0	0.0
2 – 3 times per week	8	3.5
Once a week	55	24.1
Once every two weeks	70	30.7
Once a month	66	28.9
Others	29	12.7
	228	100.0

Only a few respondents purchased fresh potatoes two to three times in a week (3.5%).

More than one half of the respondents (58.2%) cited freshness as the most important criteria they considered in their decision to purchase fresh potatoes (Table 11.2).

Table 11.2: Variables respondents consider in their decision to purchase fresh potatoes

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	73	39	11	6	2	131	58.2
Size	27	23	19	17	6	92	40.9
Price	22	25	19	12	11	89	39.6
Cleanliness	19	25	16	14	3	77	34.2
Texture	25	18	9	11	5	68	30.2
Skin colour	13	23	22	3	3	64	28.4
Quality	18	8	1	3		30	13.3
No smell	4	12	9	4		29	12.9
Easy to peel	3	3	6	4	5	21	9.3
Appearance	6	7	3		3	19	8.4
Origin	2	1	4	6	6	19	8.4
No sprouting	1	5	7	4	2	19	8.4
Type of potato/brand	2	3	7	4	1	17	7.6
No holes	1	5	4			10	4.4
Freedom from chemicals		2	4	2	2	10	4.4
Intended use	3	3		2	1	9	4.0
I can self select	3		4		1	8	3.6
Weight of the potato	1	1	3		1	6	2.7
Nicely packed	1		1		2	4	1.8
Taste		1	1	1		3	1.3
Promotion		1			1	2	0.9
The place of purchase	1			1		2	0.9
Location – near my house/ office		1				1	0.4
Halal				1		1	0.4
Parking				1		1	0.4
Organic				1		1	0.4
	225						

Other variables utilised by respondents in their decision to purchase fresh potatoes were size (40.9%), price (39.6%), cleanliness (34.2%), texture (30.2%) and skin colour (28.4%).

The quality (13.3%) and no smell (12.9%) were also considered by respondents in their decision to purchase fresh potatoes. Another group of variables respondents considered in their decision to purchase fresh potatoes were shape (easy to peel) (9.3%), appearance (8.4%), origin of the potatoes (8.4%), the absence of sprouts (8.4%), and the type or variety of potato (7.6%).

The physical appearance of the potatoes (freshness, firmness, freedom from pests and diseases, the absence of sprouts, skin colour and tuber size), food safety concerns (potatoes grown without chemical residues) and value (value for money, intended use and competitive price) were the most important variables influencing the respondents' decision to purchase fresh potatoes (Table 11.3).

Table 11.3: Importance of variables influencing respondents' decision to purchase fresh potatoes

	Mean	**SD**
Freshness	5.61[a]	0.77
Firmness	5.45[a]	0.77
Freedom from chemical residues	5.44[a]	0.93
Freedom from pests and diseases	5.44[a]	0.88
Value for money	5.23[a]	0.96
Freedom from sprouting	5.15[a]	1.05
Skin colour	5.13[a]	0.91
Intended use	5.09[a]	0.98
Competitive price	5.09[a]	1.03
Tuber size	5.07[a]	1.05
Washed	4.94[b]	1.11
Flesh colour	4.93[b]	1.05
Tuber shape	4.85[b]	1.22
Free from soil	4.84[b]	1.09
Variety	4.62[c]	1.15
Locally grown	4.28[d]	1.39
Country-of-origin	4.24[e]	1.31
Organic	4.24[e]	1.42
Depth of eyes	4.24[e]	1.34
Place of purchase	4.18[f]	1.43
Favourable prior purchase	4.11[g]	1.32
Availability of product information in-store	4.02[g]	1.36
Label or brand	3.95[g]	1.36
Advice from sales assistants	3.38[h]	1.43
Potatoes is prepacked	3.36[h]	1.40
Newspaper advertising/catalogues	3.21[i]	1.39

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

It appeared that the promotion of fresh potatoes through newspapers and catalogues was the least important variable respondents considered in purchasing fresh potatoes.

Principal component analysis, with varimax rotation and Kaiser normalization, revealed five factors that collectively explained 67.6% of the variance (Table 11.4).

Table 11.4: Factors influencing respondents' decision to purchase fresh potatoes

	Factor				
	1	**2**	**3**	**4**	**5**
Newspaper advertising/ catalogues	0.831				
Advice from sales assistant	0.830				
Potatoes is prepacked	0.822				
Availability of product information in-store	0.749				
Label or brand	0.680				
Organic		0.796			
Favourable prior purchase		0.697			
Country-of-origin		0.695			
Locally grown		0.656			
Variety		0.511			
Tuber shape			0.712		
Freedom from sprouting			0.708		
Tuber size			0.685		
Flesh colour			0.685		
Competitive price				0.805	
Value for money				0.752	
Intended use				0.734	
Washed					0.815
Skin colour					0.763
Free from soil					0.710
Eigenvalue	7.517	2.485	1.301	1.162	1.045
Percent variance	18.22	14.67	12.82	11.27	10.58
Cumulative variance	18.22	32.89	45.71	56.98	67.55
Cronbach's alpha	0.892	0.837	0.789	0.785	0.763
Factor mean	3.59^{c}	4.30^{b}	5.00^{a}	5.14^{a}	4.97^{a}

where those items with the same superscript are not significantly different at p = 0.05

Factor One, with an Eigenvalue of 7.51, included five variables that accounted for 18.2% of the variance. This factor was labelled as "promotions" as it included variables such as advertising in newspaper or catalogues, advice from sales assistants, packaging, product information in-store and labeling. Although the Cronbach's alpha for this factor was 0.89, indicative of a high reliability, respondents considered this construct to be the least important in their decision to purchase fresh potatoes.

Factor Two, with an Eigenvalue of 2.49, had five variables that accounted for 14.7% of the variance. This construct, which was labelled as “prior experience”, contained a diverse range of variables that were found to influence respondents’ decision to purchase fresh potatoes such as organic, favourable prior purchase, where the potatoes were grown and variety. The Cronbach’s alpha for this construct was 0.84, but again, it was of only some importance in the respondents’ decision to purchase fresh potatoes.

Factor Three, had an Eigenvalue of 1.30 and explained 12.8% of the variance. With a Cronbach’s alpha of 0.79, not only was the variable considered reliable, but it was considered to be among the most important factors influencing respondents’ decision to purchase fresh potatoes. The variables which loaded onto this factor included tuber size, tuber shape, freedom from sprouting and flesh colour and was labelled as “physical appearance”.

Factor Four, with an Eigenvalue of 1.16, was comprised of three variables (competitive price, value for money and intended use) and was labelled as “value”. This factor accounted for 11.3% of the variance and had a Cronbach’s alpha of 0.79. This construct was also considered to be one of the most important in the respondents’ decision to purchase fresh potatoes from a retail store.

Factor Five, which was labelled as “usage”, included three variables that facilitated the use of potatoes in the home (washed, skin colour and freedom from soil). This final factor accounted for 10.6% of the variance. Not only was this factor considered reliable (Cronbach’s alpha of 0.76), but it too was one of the most important in the respondents’ decision to purchase fresh potatoes.

Respondents were then asked to relate those variables that they used in their decision to purchase fresh potatoes to eight desired outcomes.

Most respondents (63.3%) ranked freshness as that variable that was most often associated with good taste (Table 11.5).

Table 11.5: The association between criteria utilised in the decision to purchase fresh potatoes with a good taste

Desired outcome 1: The food has a good taste	Ranking			N	%
	1	2	3		
Freshness	90	30	11	131	63.3
Firmness	26	30	25	81	39.1
Flesh colour	23	31	12	66	31.9
Skin colour	34	12	9	55	26.6
Country-of-origin	7	7	7	21	10.1
Tuber size	5	6	8	19	9.2
Freedom from sprouting	1	11	6	18	8.7
Freedom from chemical residues	3	5	9	17	8.2
Freedom from pests and diseases		9	8	17	8.2
Washed	3	9	3	15	7.2
Variety	7	3	2	12	5.8
Organic	3	4	4	11	5.3
Tuber shape		2	5	7	3.4
Depth of eyes			7	7	3.4
Free from soil	1	2	3	6	2.9
Intended use	1	1	2	4	1.9
Competitive price		1	1	2	0.9
Value for money	1			1	0.5
Favourable prior purchase	1			1	0.5
Quality	1			1	0.5
Label or brand		1		1	0.5
	207				

Other variables that were indicative of good taste were firmness (39.1%), flesh colour (31.9%) and skin colour (26.6%).

Good taste was seldom associated with price (0.9%) or value (0.5%) as these variables were seldom cited.

In identifying that the potatoes were considered safe to eat, almost 70.0% of the respondents indicated the importance of potatoes being free from chemical residues and free from any pests and diseases (54.9%) (Table 11.6).

Table 11.6: The association between criteria utilised in the decision to purchase fresh potatoes which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Freedom from chemical residues	72	52	20	144	69.9
Freedom from pests and diseases	57	30	26	113	54.9
Free from soil	7	10	17	34	16.5
Freshness	10	10	9	29	14.1
Washed	18	7	4	29	14.1
Organic	17		11	28	13.6
Freedom from sprouting	4	10	5	19	9.2
Skin colour	10	5	3	18	8.7
Organic		18		18	8.7
Flesh colour	3	9	3	15	7.3
Country-of-origin	2	3	7	12	5.8
Firmness	1	1	2	4	1.9
Label or brand	1	2	1	4	1.9
Locally grown	1	2		3	1.5
Availability of product information in-store		1	2	3	1.5
Depth of eyes	1			1	0.5
Intended use	1			1	0.5
Competitive price			1	1	0.5
Favourable prior purchase	1			1	0.5
Advice from sales assistants		1		1	0.5
Place of purchase			1	1	0.5
	206				

Respondents also considered variables such as freedom from soil (16.5%), washed (14.1%), fresh (14.1%) and organic potatoes (13.6%) as being associated with food that was considered safe to eat.

Intended use (0.5%), competitive price (0.5%), favourable prior purchase (0.5%), advice from sales assistants (0.5%) and place of purchase (0.5%) were among the least cited variables associated with food safety.

In determining that the potatoes were healthy and nutritious, freshness (41.0%) and freedom from chemical residues (41.0%) were the most frequently cited variables in the respondents' decision to purchase fresh potatoes (Table 11.7).

Table 11.7: The association between criteria utilised in the decision to purchase fresh potatoes with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	49	24	9	82	41.0
Freedom from chemical residues	25	30	27	82	41.0
Freedom from pests and diseases	23	24	13	60	30.0
Organic	25	9	24	58	29.0
Firmness	15	12	13	40	20.0
Skin colour	24	6	4	34	17.0
Flesh colour	8	16	5	29	14.5
Free from soil	4	9	2	15	7.5
Washed	10	3	3	16	8.0
Freedom from sprouting	1	5	3	9	4.5
Label or brand	3	2		5	2.5
Variety	2		2	4	2.0
Tuber shape		1	3	4	2.0
Intended use	2		1	3	1.5
Potatoes is prepacked	1	2		3	1.5
Place of purchase	1	2		3	1.5
Locally grown	1	2		3	1.5
Favourable prior purchase	3			3	1.5
Country-of-origin	1	1		2	1.0
Depth of eyes	1		1	2	1.0
Tuber size		1		1	0.5
Availability of product information in-store			1	1	0.5
Quality	1			1	0.5
	200				

Other variables that were most often associated with health and nutrition were freedom from pests and diseases (30.0%), organic (29.0%), firmness (20.0%), skin colour (17.0%) and flesh colour (14.5%).

Place of purchase (1.5%) and country-of-origin (1.0%) were among the variables least frequently cited by respondents as leading to food that was perceived to be healthy and nutritious.

Competitive price (38.1%), value for money (27.9%) and freshness (25.4%) were the variables most often associated with value for money (Table 11.8).

Table 11.8: The association between criteria utilised in the decision to purchase fresh potatoes that represented good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	47	18	10	75	38.1
Value for money	33	13	9	55	27.9
Freshness	35	12	3	50	25.4
Tuber size	13	11	5	29	14.7
Intended use	11	4	9	24	12.2
Label or brand	6	13	5	24	12.2
Firmness	5	10	4	19	9.6
Country-of-origin	5	7	6	18	9.1
Organic	5	3	8	16	8.1
Place of purchase	6	7	2	15	7.6
Locally grown	8	1	3	12	6.1
Potatoes is prepacked	1	7	1	9	4.6
Variety	2	3	4	9	4.6
Freedom from pests and disease	2	3	4	9	4.6
Tuber shape	3	4	2	9	4.6
Freedom from chemical residues		5	2	7	3.6
Favourable prior purchase	2	1	4	7	3.6
Flesh colour	2	2	2	6	3.0
Skin colour	3	1	1	5	2.5
Newspaper advertising/catalogues	2	1	2	5	2.5
Advice from sales assistants	2	1	1	4	2.0
Washed	1	1	1	3	1.5
Freedom from sprouting	1	1	1	3	1.5
Availability of product information in-store	1			1	0.5
Quality	1			1	0.5
	197				

Tuber size (14.7%), the intended use (12.2%) and the label or brand (12.2%) were also considered indicative of value for money.

With regard to fresh potatoes that were perceived to represent good value for money, respondents were less likely to consider freedom from pests and diseases (4.6%), freedom from chemical residues (3.6%), flesh colour (3.0%) and skin colour (2.5%), and promotional items such as advertising in newspaper or catalogues (2.5%) and advice from sales assistants (2.0%).

Firmness (49.7%) and freshness (48.7%) were most often cited by respondents as being associated with good texture and mouth feel (Table 11.9).

Table 11.9: The association between criteria utilised in the decision to purchase fresh potatoes with good texture/mouth feel

Desired outcome 5: The food has good texture/mouth feel	Ranking			N	%
	1	2	3		
Firmness	42	37	20	99	49.7
Freshness	57	25	15	97	48.7
Flesh colour	32	26	10	68	34.2
Skin colour	24	12	13	49	24.6
Tuber shape	6	4	11	21	10.6
Tuber size	6	12	2	20	10.1
Freedom from sprouting	4	7	6	17	8.5
Freedom from chemical residues	1	8	6	15	7.5
Washed	2	8	2	12	6.0
Freedom from pests and diseases	6	3	3	12	6.0
Country-of-origin	4	2	6	12	6.0
Organic	5	2	4	11	5.5
Variety	3	3	2	8	4.0
Depth of eyes	1	1	5	7	3.5
Locally grown	2		1	3	1.5
Intended use	1	1	1	3	1.5
Free from soil	1	1	1	3	1.5
Competitive price	1			1	0.5
Value for money		1		1	0.5
Label or brand		1		1	0.5
Advice from sales assistants		1		1	0.5
Place of purchase			1	1	0.5
Quality	1			1	0.5
	199				

Other variables which described the physical appearance of the tubers like flesh colour (34.2%) and skin colour (24.6%), were also considered indicative of the texture or mouth feel.

Variables such as competitive price (0.5%), value for money (0.5%) and promotional variables such as label/brand (0.5%), and advice from sales assistants (0.5%) were among the variables least often cited by respondents as indicating that the fresh potatoes purchased had a good texture or mouth feel.

Most respondents (69.8%) cited organic as being that variable which was most often associated with the production of potatoes in a manner that was conducive for the environment (Table 11.10).

Table 11.10: The association between criteria utilised in the decision to purchase fresh potatoes that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	**Ranking**			**N**	**%**
	1	**2**	**3**		
Organic	103	26	12	141	69.8
Freedom from chemical residues	44	38	11	93	46.0
Freedom from pests and diseases	14	15	16	45	22.3
Locally grown	11	19	9	39	19.3
Freshness	5	6	3	14	6.9
Free from soil	2	3	5	10	4.9
Label or brand	3	2	3	8	3.9
Country-of-origin	2	2	3	7	3.5
Flesh colour	4		2	6	2.9
Freedom from sprouting	1	2	2	5	2.5
Firmness	2	1	2	5	2.5
Availability of product information in-store	3	1	1	5	2.5
Newspaper advertising/catalogues	2	3		5	2.5
Tuber size		3	1	4	1.9
Advice from sales assistants		3	1	4	1.9
Variety	1		2	3	1.5
Skin colour		1	1	2	0.9
Tuber shape			2	2	0.9
Value for money	1		1	2	0.9
Potatoes is prepacked		1	1	2	0.9
Place of purchase	1		1	2	0.9
Washed	1			1	0.5
Competitive price	1			1	0.5
Intended use	1	1		2	0.5
Depth of eyes			1	1	0.5
Favourable prior purchase		1		1	0.5
	202				

Other variables that were related to this desired outcome were freedom from chemical residues (46.0%), freedom from pests and diseases (22.3%) and locally grown (19.3%). Promotional variables such as the label (3.9%), product information in-store (2.5%), advertising in newspapers or catalogues (2.5%) and advice from sales assistant (1.9%)

were rarely cited by respondents in purchasing potatoes that had been produced in a manner that was good for the environment.

Potatoes that were free from chemical residues (44.8%) was the most frequently cited variable respondents used in their decision to purchase fresh potatoes that had been produced in a way that protected worker welfare (Table 11.11).

Table 11.11: The association between criteria utilised in the decision to purchase fresh potatoes that protects worker welfare

Desired outcome 7: The food is has been produced in a way that protects worker welfare	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freedom from chemical residues	44	29	9	82	44.8
Organic	33	13	8	54	29.5
Locally grown	33	11	9	53	28.9
Freedom from pests and diseases	17	6	4	27	14.8
Country-of-origin	13	2	3	18	9.8
Availability of product information in-store	7	4	3	14	7.7
Advice from sales assistants	4	9	1	14	7.7
Place of purchase	4	5	2	11	6.0
Competitive price	5	5		10	5.5
Newspaper advertising/catalogues	5	2	3	10	5.5
Free from soil	1	4	3	8	4.4
Value for money	2	3	3	8	4.4
Label or brand	2	3	3	8	4.4
Potatoes is prepacked	4	1	2	7	3.8
Intended use	2	3	1	6	3.3
Variety	2	2	2	6	3.3
Washed	2	3		5	2.7
Favourable prior purchase	2		2	4	2.2
Freedom from sprouting		1	2	3	1.6
Freshness		1	1	2	1.1
Firmness	1			1	0.5
	183				

Organic (29.5%) and locally grown (28.9%) were the other most frequently cited variables in selecting potatoes that had been produced in a way that was not harmful for workers.

Competitive price (5.5%) and value for money (4.4%) were less often associated with worker welfare.

To ensure that the food was Halal, potatoes that had been grown locally (36.4%), the label or brand (36.4%) and the country-of-origin (33.7%) were the most frequently cited variables (Table 11.12).

Table 11.12: The association between criteria utilised in the decision to purchase fresh potatoes that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	**Ranking**			**N**	**%**
	1	**2**	**3**		
Locally grown	43	17	7	67	36.4
Label or brand	35	24	8	67	36.4
Country-of-origin	35	17	10	62	33.7
Place of purchase	17	8	8	33	17.9
Availability of product information in-store	7	13	12	32	17.4
Organic	15	5	10	30	16.3
Freedom from chemical residues	6	7	6	19	10.3
Advice from sales assistants	6	5	7	18	9.9
Freshness	6	2	1	9	4.9
Newspaper advertising/catalogues	3	6		9	4.9
Favourable prior purchase	4	1		5	2.7
Washed	2	1	1	4	2.2
Freedom from pests and diseases	1	2	1	4	2.2
Intended use	1	1		2	1.1
Free from soil	2			2	1.1
Variety			2	2	1.1
Flesh colour	1			1	0.5
Tuber shape		1		1	0.5
Potatoes is prepacked			1	1	0.5
	184				

The place of purchase (17.9%), the availability of product information in-store (17.4%) and organic (16.3%) were also among the most frequently cited variables respondents used to guarantee that the potatoes were Halal.

Variables indicating the physical appearance of the potatoes such as freedom from pests and diseases (2.2%), freedom from soil (1.1%), flesh colour (0.5%) and tuber shape (0.5%) were infrequently cited by respondents as being associated with Halal.

The importance of the desired values were then ranked by respondents. Respondents preferred to purchase fresh potatoes that were safe to eat, healthy and nutritious, guaranteed Halal, with a good taste and good texture or mouth feel (Table 11.13).

Table 11.13: Importance of criteria respondents use in their decision to purchase fresh potatoes in a retail store

	Mean	SD
The food is safe to eat	5.62[a]	0.71
The food is healthy and nutritious	5.55[a]	0.71
The food is guaranteed Halal	5.45[a]	1.11
The food has a good taste	5.37[a]	0.85
The food had good texture/mouth feel	5.33[a]	0.79
The food represents value for money	5.06[b]	0.94
The food has been produced in a way that is good for the environment	5.01[c]	1.00
The food has been produced in a way that protects worker welfare	4.68[d]	1.21

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Value for money was of secondary importance, with consumers concerns about sustainability being even further down the list. When purchasing fresh potatoes, the least important variable was worker welfare.

Some 28.3% of respondents were found to be often dissatisfied with the Halal status of the potatoes purchased, while another 25.3% of respondents always expressed concerns about the safety of the potatoes purchased (Table 11.14).

Some 21.9% of respondents often felt dissatisfied with the health and nutrition of the potatoes purchased, the value proposition (20.9%) or the texture/mouth feel (18.3%). Some 14.2% of respondents were always displeased with the taste of potatoes or dissatisfied with the way in which the potatoes had been produced so as to minimise the impact on the environment (13.4%) or the workers' welfare (11.4%).

Table 11.14: Occasions where respondents felt unhappy with the quality of fresh potatoes purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 219	53.4	3.2	4.6	0.9	5.9	3.7	28.3	1.0	1.0
The food is safe to eat. N = 225	44.0	9.8	7.1	4.9	3.6	5.3	25.3	1.0	2.0
The food is healthy and nutritious. N = 224	41.5	11.6	5.4	6.7	4.9	8.0	21.9	1.0	2.0
The food represents value for money. N = 225	31.6	17.8	9.3	3.6	8.4	8.4	20.9	1.0	3.0
The food has good texture/mouth feel. N = 219	29.7	16.0	13.7	1.8	9.6	11.0	18.3	1.0	3.0
The food has a good taste. N = 226	26.1	23.0	13.3	4.4	9.7	9.3	14.2	1.0	3.0
The food has been produced in a way that is good for the environment. N = 216	37.0	11.6	11.6	5.6	8.8	12.0	13.4	1.0	3.0
The food has been produced in a way that protects worker welfare. N = 219	43.8	11.9	9.1	5.0	8.7	10.1	11.4	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

Despite the dissatisfaction, more than half of the respondents had never had (or at worst one time in ten) purchased potatoes that were not Halal (56.6%), failed to protect worker welfare (55.7%) or were unhealthy (53.1%). Similarly, almost half of the respondents had never had (or at worst one time in ten) purchased potatoes that were unsafe to eat (49.8%), did not represent good value for money (49.4%), had a poor taste

(49.1%) or failed to protect the environment (48.6%). At the same time, some 45.7% of respondents had never been (or at worst one time in ten) disappointed with the texture/mouth feel of the potatoes they had purchased.

Where respondents were dissatisfied with the quality of the fresh potatoes they had purchased, the most frequently cited reasons for their dissatisfaction were rotten tubers (53.2%) and tubers that were not fresh (51.1%) (Table 11.15).

Table 11.15: Reasons for dissatisfaction with the quality of fresh potatoes

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Rotten	44	26	14	9	6	99	53.2
Not fresh	42	33	14	3	3	95	51.1
Too soft	21	22	9	3	1	56	30.1
Sprouting	10	8	7	8	3	36	19.4
Taste	17	8	3	2	4	34	18.3
Price	14	4	8	3	5	34	18.3
Dirty	5	8	11	3		27	14.5
Size/shape	13	6	1	4	2	26	13.9
Skin colour	5	8	8	3		24	12.9
Not organic	2	9	5		1	17	9.1
Prepacked	7	1	1	1		10	5.4
No information regarding the product	2	1	2	3	1	9	4.8
Ripeness	3	1				4	2.2
Not nicely packed		2		1		3	1.6
Difficult to peel		1				1	0.5
My fault – I did not give close attention when selecting	1					1	0.5
	186						

Other reasons given by respondents to describe their dissatisfaction included the tubers being too soft (30.1%), sprouting (19.4%), poor taste (18.3%) and the high cost (18.3%). Dirty tubers (14.5%), poor size and shape (13.9%) and skin colour (12.9%) also proved problematic.

11.3 Part Two: The purchase of fresh spinach

Fresh spinach was most frequently purchased at least one time per week (44.1%) (Table 11.16).

Table 11.16: Frequency of purchasing fresh spinach

	N	%
Everyday	0	0.0
2 – 3 times per week	15	7.8
Once a week	70	36.3
Once every two weeks	54	28.0
Once a month	30	15.5
Others	24	12.4
	193	100.0

When thinking about spinach, most respondents (92.6%) considered freshness in their decision to purchase fresh spinach (Table 11.17).

Respondents preferred to purchase spinach that was clean (37.4%) and not too expensive (36.8%). Good colour (27.4%), good leaves (21.6%), freedom from chemical residues (18.9%) and free from pests (17.4%) were frequently cited.

Other variables that were less often considered by respondents in their decision to purchase fresh spinach included the label/brand (1.6%), the location of the retail outlet (1.1%) and taste (0.5%).

Table 11.17: Variables respondents consider in their decision to purchase fresh spinach

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	134	23	14	4	1	176	92.6
Cleanliness	10	27	13	13	8	71	37.4
Price	9	23	16	13	9	70	36.8
Colour	18	23	6	3	2	52	27.4
Leaves	5	17	11	6	2	41	21.6
Freedom from chemicals	3	11	16	5	1	36	18.9
Freedom from pests		13	10	6	4	33	17.4
Quality	4	8	7	1		20	10.5
Size	1	8	4	2	4	19	10.0
Organic	1	3	1	9	4	18	9.5
Origin	1	1	6	2		10	5.3
Firmness of the stem			7	3		10	5.3
Nicely packed	1		1	2	3	7	3.7
Have been eaten by pests		3	1		1	5	2.6
The type of spinach	1	1		2		4	2.1
I can self select	2			1	1	4	2.1
Nutrients		1	2			3	1.6
Label/brand		1		1	1	3	1.6
Location				2		2	1.1
Taste		1				1	0.5
	190						

The most important variables which influenced the respondents' decision to purchase fresh spinach revolved around the physical appearance of the product (freshness, no wilting, good coloured leaves that were free from pests and diseases, blemishes and bruising, and firmness), freedom from chemical residues, and good value for money (Table 11.18).

Table 11.18: Importance of variables influencing respondents' decision to purchase fresh spinach

	Mean	SD
Freshness	5.76[a]	0.54
Free from wilting	5.67[a]	0.62
Leaves	5.62[a]	0.71
Freedom of pests and diseases	5.57[a]	0.77
Colour	5.54[a]	0.79
Freedom from chemical residues	5.49[a]	0.86
Freedom from blemish and bruise	5.44[a]	0.82
Firmness of the stem	5.29[a]	0.91
Value for money	5.26[a]	0.98
Free from soil	5.02[b]	0.97
Locally grown	4.88[c]	1.22
Variety	4.82[d]	1.21
Organic	4.81[d]	1.09
Size	4.72[d]	1.18
Favourable prior purchase	4.56[e]	1.27
Spinach is sold loose	4.53[e]	1.25
Spinach is tied in bunches	4.44[f]	1.33
Stem removed	3.99[g]	1.48
Spinach is prepacked	3.92[h]	1.33

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Principal component analysis revealed three factors which collectively explained 71.3% of the variance (Table 11.19).

Factor One, with an Eigenvalue of 3.50, was comprised of four variables (organic, size, favourable prior purchase and locally grown). This factor was labelled as "safe". It accounted for 26.2% of the variance and with a Cronbach's alpha of 0.78 was considered highly reliable. Respondents ranked this construct as the second most important construct in their decision to purchase fresh spinach from a retail store.

Factor Two, with an Eigenvalue of 1.81, had three variables (free from wilting, freshness and leaves) which accounted for 26.1% of the variance. This factor was labelled as "quality". The Cronbach's alpha for this factor was 0.84, indicative of a high reliability. Not unexpectedly, this factor was the most important in the respondents' decision to purchase fresh spinach.

Table 11.19: Factors influencing respondents' decision to purchase fresh spinach

	Factor		
	1	**2**	**3**
Organic	0.750		
Size	0.746		
Favourable prior purchase	0.741		
Locally grown	0.734		
Free from wilting		0.878	
Freshness		0.867	
Leaves		0.836	
Spinach is tied in bunches			0.895
Spinach is prepacked			0.880
Eigenvalue	3.500	1.806	1.107
Percent variance	26.23	26.05	18.99
Cumulative variance	26.23	52.28	71.26
Cronbach's alpha	0.779	0.838	0.821
Factor mean	4.76^{b}	5.68^{a}	4.19^{c}

where those items with the same superscript are not significantly different at p = 0.05

Factor Three, with an Eigenvalue of 1.11 captured two variables which explained 18.9% of the variance. This construct had a Cronbach's alpha of 0.82. The variables which loaded into this construct indicated that the spinach was either prepacked or tied into bunches. Therefore, the construct was labelled as "convenience". Not only did bunching make it easier for the respondents to purchase fresh spinach, but also limited the amount of damage to the leaves.

Respondents were then asked which variables they most often used to achieve eight desired outcomes.

More than one half of the respondents (59.9%) indicated that freshness was an important indicator of good taste (Table 11.20).

Other variables which were considered indicative of good taste were colour (41.2%), leaves (36.7%), freedom from wilting (21.5%), firmness of the stem (19.2%), and freedom from any blemishes or bruises (14.7%). Organic (10.7%) and freedom from chemical residues (8.5%) were also associated with good taste.

Table 11.20: The association between criteria utilised in the decision to purchase fresh spinach with a good taste

Desired outcome 1: The food has a good taste	Ranking			N	%
	1	2	3		
Freshness	56	22	28	106	59.9
Colour	62	8	3	73	41.2
Leaves	12	44	9	65	36.7
Free from wilting	6	13	19	38	21.5
Firmness of the stem	8	16	10	34	19.2
Freedom from blemish and bruise	5	12	9	26	14.7
Organic	9	6	4	19	10.7
Freedom from chemical residues	8	3	4	15	8.5
Locally grown	2	1	5	8	4.5
Variety	5	1		6	3.4
Freedom from pests and diseases	1	3	2	6	3.4
Size		2	3	5	2.8
Free from soil	1	2		3	1.7
Value for money	1		1	2	1.1
Stem removed			1	1	0.6
Quality	1			1	0.6
Intended use		1		1	0.6
	177				

Value for money (1.1%), stem removed (0.6%), quality (0.6%) and intended use (0.6%) were among the least cited variables associated with the taste of spinach.

In determining whether the spinach was safe to eat, some 62.9% of respondents cited freedom from chemical residues (Table 11.21).

Two other variables which were also frequently cited by respondents in determining whether the spinach was safe to eat were freedom from pests and diseases (49.4%) and organic (31.5%). Other variables which were indicative of food safety included freedom from any blemishes and bruises (17.4%), no soil attached (16.9%), freshness (13.5%) and good colour (10.1%).

Value for money (0.6%) and label/brand (0.6%) were poor indicators of food safety.

Table 11.21: The association between criteria utilised in the decision to purchase fresh spinach which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Freedom from chemical residues	57	34	21	112	62.9
Freedom from pests and diseases	35	31	22	88	49.4
Organic	25	17	14	56	31.5
Freedom from blemish and bruise	14	7	10	31	17.4
Free from soil	14	11	5	30	16.9
Freshness	12	5	7	24	13.5
Colour	9	7	2	18	10.1
Free from wilting	5	5	3	13	7.3
Locally grown	3	4	3	10	5.6
Leaves	1	4	3	8	4.5
Firmness of the stem	2		1	3	1.7
Stem removed	1	1		2	1.1
Value for money			1	1	0.6
Label/brand		1		1	0.6
	178				

In order to consume healthy and nutritious food, freshness (42.6%) was the variable most frequently cited by respondents in their decision to purchase fresh spinach (Table 11.22).

Organic (32.4%), good colour (27.8%) and freedom from chemical residues (27.3%) were other variables most often cited by respondents in purchasing spinach that they perceived was healthy and nutritious.

Size (0.6%), stem removed (0.6%), variety (0.6%) and label/brand (0.6%) were among the variables less often associated with healthy and nutritious spinach.

Table 11.22: The association between criteria utilised in the decision to purchase fresh spinach with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	30	21	24	75	42.6
Organic	32	17	8	57	32.4
Colour	32	8	9	49	27.8
Freedom from chemical residues	21	17	10	48	27.3
Leaves	4	30	4	38	21.6
Free from wilting	15	6	14	35	19.9
Freedom from pests and diseases	14	9	11	34	19.3
Freedom from blemish and bruise	16	7	8	31	17.6
Firmness of the stem	3	8	13	24	13.6
Free from soil	1	5	3	9	5.1
Locally grown	1	5		6	3.4
Quality	4			4	2.3
Size	1			1	0.6
Stem removed	1			1	0.6
Variety	1			1	0.6
Label/ brand		1		1	0.6
	176				

Value for money (35.1%) and freshness (29.2%) were the two variables most often cited in purchasing spinach that delivered good value for money (Table 11.23).

While some respondents (19.6%) indicated that loose spinach represented better value, a similar number of respondents (15.5%) suggested that spinach tied in bunches was better value. For other respondents, the variety (18.5%), organic (10.8%) and size (10.1%) were indicative of value for money.

Freedom from blemishes and bruises (3.6%), freedom from soil (3.6%) and freedom from pests and diseases (2.4%) were among the variables less often mentioned by respondents in purchasing spinach that was perceived to represent good value for money.

Table 11.23: The association between criteria utilised in the decision to purchase fresh spinach that represented value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Value for money	45	10	4	59	35.1
Freshness	31	5	13	49	29.2
Spinach is sold loose	14	13	6	33	19.6
Variety	11	16	4	31	18.5
Spinach is tied in bunches	14	5	7	26	15.5
Organic	6	7	5	18	10.8
Size	12	3	2	17	10.1
Locally grown	5	9	2	16	9.5
Free from wilting	4	4	7	15	8.9
Firmness of the stem	3	8	3	14	8.3
Freedom from chemical residues	1	3	7	11	6.5
Spinach is prepacked	2	3	4	9	5.4
Colour	7	1		8	4.8
Leaves	2	4		6	3.6
Freedom from blemish and bruise	2	3	1	6	3.6
Free from soil	4	2		6	3.6
Favourable prior purchase	3	2		5	2.9
Freedom from pests and diseases		1	3	4	2.4
Quality	2	1		3	1.8
Stem removed			1	1	0.6
	168				

More than one half of the respondents (52.7%) believed that freshness was indicative of a good texture or mouth feel (Table 11.24).

Other variables most frequently cited included the firmness of the stem (35.5%), colour (31.9%), free from wilting (29.6%), good leaves (27.2%) and freedom from any blemishes or bruises (19.5%). For some 14.2% of respondents, organic was also a good indicator of good texture and mouth feel.

Favourable prior purchase (0.6%), locally grown (0.6%), prepacked (0.6%) and quality (0.6%) were variables perceived to have little impact on good texture and mouth feel.

Table 11.24: The association between criteria utilised in the decision to purchase fresh spinach with good texture/mouth feel

Desired outcome 5: The food had good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	54	17	18	89	52.7
Firmness of the stem	20	26	14	60	35.5
Colour	36	13	5	54	31.9
Free from wilting	14	24	12	50	29.6
Leaves	14	25	7	46	27.2
Freedom from blemish and bruise	9	7	17	33	19.5
Organic	13	5	6	24	14.2
Freedom from chemical residues	3	7	3	13	7.7
Free from soil	1	2	4	7	4.1
Variety	3	1	1	5	2.9
Freedom from pests and diseases		2	1	3	1.8
Size			2	2	1.2
Stem removed		1	1	2	1.2
Favourable prior purchase	1			1	0.6
Locally grown			1	1	0.6
Spinach is prepacked			1	1	0.6
Quality	1			1	0.6
	169				

Organic (68.0%) and freedom from chemical residues (55.8%) were the two most frequently cited variables given by respondents in purchasing fresh spinach which had been produced in an environmentally friendly manner (Table 11.25).

Freedom from pests and diseases (28.5%), locally grown (14.5%) and freedom from soil (10.5%) were also indicative of production systems that minimised damage to the environment.

The colour (1.2%), leaves (1.2%), size (0.6%) and prepacked (0.6%) were less often associated with spinach that had been cultivated in a manner that was good for the environment.

Table 11.25: The association between criteria utilised in the decision to purchase fresh spinach that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organic	95	16	6	117	68.0
Freedom from chemical residues	40	40	16	96	55.8
Freedom from pests and diseases	12	22	15	49	28.5
Locally grown	11	9	5	25	14.5
Free from soil	2	6	10	18	10.5
Freshness	5	3	3	11	6.4
Free from wilting		2	4	6	3.5
Freedom from blemish and bruise	1	1	2	4	2.3
Firmness of the stem	3			3	1.7
Colour	1	1		2	1.2
Leaves		2		2	1.2
Size	1			1	0.6
Spinach is prepacked	1			1	0.6
	172				

In obtaining spinach that had been produced with minimal harm to workers, freedom from chemical residues was the most frequently cited variable (54.5%) (Table 11.26).

Other variables which described how and where the spinach was grown, such as organically (34.4%) and locally (30.5%) were among the most frequently cited variables believed to produce spinach that had minimal impact on workers welfare.

A group of variables which described the physical appearance of the spinach such as colour (0.6%), leaves (0.6%), firmness of the stem (0.6%), size (0.6%), and without stem (0.6%) were less often associated with the protection of workers welfare. The place of purchase was another variable rarely associated with protecting workers welfare.

Table 11.26: The association between criteria utilised in the decision to purchase fresh spinach that protects worker welfare

Desired outcome 7: The food has been produced in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Freedom from chemical residues	48	26	10	84	54.5
Organic	33	15	5	53	34.4
Locally grown	34	11	2	47	30.5
Freedom from pests and diseases	7	12	10	29	18.8
Spinach is prepacked	10	4	1	15	9.7
Value for money	5	2	3	10	6.5
Spinach is tied in bunches	2	3	3	8	5.2
Freshness	4		3	7	4.5
Free from soil	2	1	3	6	3.9
Spinach is sold loose	1	2	2	5	3.2
Variety	2	1	2	5	3.2
Favourable prior purchase	2	1	1	4	2.6
Freedom from blemish and bruise	2		1	3	1.9
Free from wilting			2	2	1.3
Colour	1			1	0.6
Leaves		1		1	0.6
Firmness of the stem	1			1	0.6
Size		1		1	0.6
Stem removed			1	1	0.6
Place of purchase		1		1	0.6
	154				

Spinach which had been grown locally (63.8%) was considered by respondents to be the best indicator that the food was Halal (Table 11.27).

Organically grown (40.4%) and freedom from chemical residues (22.7%) were the two other variables considered most influential in the respondents' decision to purchase spinach that was considered Halal.

Variables which described the physical appearance of the product like freshness (7.8%), the absence of soil (4.3%), the firmness of the stem (0.7%) and freedom from wilting (0.7%) were seldom associated with Halal.

Table 11.27: The association between criteria utilised in the decision to purchase fresh spinach that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	Ranking			N	%
	1	2	3		
Locally grown	68	13	9	90	63.8
Organic	27	16	14	57	40.4
Freedom from chemical residues	12	15	5	32	22.7
Freedom from pests and diseases	5	4	7	16	11.3
Freshness	4	2	5	11	7.8
Favourable prior purchase	7	2		9	6.4
Label/brand	6	2		8	5.7
Free from soil	4	2		6	4.3
Variety	3	2	1	6	4.3
Spinach is prepacked	2	1	2	5	3.5
Colour	1	1		2	1.4
Value for money	1		1	2	1.4
Leaves		1		1	0.7
Firmness of the stem	1			1	0.7
Free from wilting			1	1	0.7
Size		1		1	0.7
Stem removed			1	1	0.7
	141				

All desired values were then ranked by respondents according to their importance. With regards to the purchase of fresh spinach, respondents preferred to purchase spinach that was perceived to be healthy and nutritious, safe to eat, guaranteed Halal, with a good taste and good texture or mouth feel (Table 11.28).

Table 11.28: Importance of criteria respondents use in their decision to purchase fresh spinach in a retail store

	Mean	SD
The food is healthy and nutritious	5.70[a]	0.59
The food is safe to eat	5.69[a]	0.61
The food is guaranteed Halal	5.49[a]	1.06
The food has a good taste	5.47[a]	0.75
The food had good texture/mouth feel	5.41[a]	0.76
The food represents value for money	5.29[b]	0.87
The food has been produced in a way that is good for the environment	5.15[c]	0.96
The food has been produced in a way that protects worker welfare	4.84[d]	1.19

where 1 is “not at all important” and 6 is “very important”

those items with the same superscript are not significantly different at p = 0.05

Spinach which represented good value for money was of secondary importance, followed by spinach that had been produced in a manner that had little impact on the environment. Spinach that had been produced in a manner that protected workers welfare was of least importance.

When dealing with dissatisfaction, some 22.6% of respondents were found to be always unhappy with the assurance that the spinach was Halal, while another 20.5% of respondents expressed concerns with regard to the health and nutritional status of the vegetable (Table 11.29).

Similarly, respondents often felt disappointment with the safety of the spinach purchased (17.9%), the value for money (16.3%), the poor texture/mouth feel (15.4%) and the bad taste (14.7%). Some respondents were unhappy with how the spinach had been produced and its impact on the environment (12.1%) and worker welfare (11.2%).

Although some respondents were disappointed, most others were generally satisfied. More than half of the respondents had never (or at worst one time in ten) experienced bad tasting spinach (59.4%) or spinach that was not Halal (59.2%). Most respondents had never (or at worst one time in ten) had an unpleasant experience when purchasing spinach that was considered unsafe (56.3%), unhealthy and non-nutritious (55.3%) or the texture/mouth feel of the vegetable undesirable (54.3%). Over half of the respondents interviewed had never or infrequently experienced spinach that had an adverse impact on the environment (53.3%), worker welfare (52.4%) or failed to deliver good value for money (51.1%).

Table 11.29: Occasions where respondents felt unhappy with the quality of fresh spinach purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 186	49.5	9.7	6.5	3.2	3.2	5.4	22.6	1.0	2.0
The food is healthy and nutritious. N = 190	41.6	13.7	8.4	4.2	4.7	6.8	20.5	1.0	2.0
The food is safe to eat. N = 190	43.7	12.6	8.9	2.6	7.4	6.8	17.9	1.0	2.0
The food represents value for money. N = 190	33.7	17.4	11.6	3.7	9.5	7.9	16.3	1.0	2.0
The food has good texture/mouth feel. N = 188	36.2	18.1	9.0	4.3	7.4	9.6	15.4	1.0	2.0
The food has a good taste. N = 190	34.7	24.7	8.4	3.2	6.3	7.9	14.7	1.0	2.0
The food has been produced in a way that is good for the environment. N = 182	41.2	12.1	11.0	6.0	6.0	11.5	12.1	1.0	2.0
The food has been produced in a way that protects worker welfare. N = 187	41.2	11.2	12.3	5.9	8.6	9.6	11.2	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

When respondents were dissatisfied with the quality of the fresh spinach they had purchased, most respondents (66.4%) indicated that it was not fresh (Table 11.30).

Other reasons given by respondents who expressed their dissatisfaction with the quality of the fresh spinach purchased included wilting (37.8%), a high price (25.2%), and

prior infestation by pests (20.9%). Not clean (17.5%), chemical residues (16.8%), poor taste (14.7%) and poor colour (14.7%) were the other reasons most often given for the respondents' dissatisfaction.

Table 11.30: Reasons for dissatisfaction with the quality of fresh spinach

	Ranking					N	%
	1	2	3	4	5		
Not fresh	44	35	11	4	1	95	66.4
Easily wilted	34	13	5	1	1	54	37.8
Price	10	12	8	5	1	36	25.2
Eaten by pests	13	4	10		3	30	20.9
Not clean	10	9	5	1		25	17.5
Contains chemical	8	8	6	2		24	16.8
Taste	11	4	3	1	2	21	14.7
Colour	6	7	4	4		21	14.7
Prepacked	2	6	2		2	12	8.4
Size	3	2	1	2		8	5.6
Availability	2			1	1	4	2.8
	143						

11.4 Part Three: The purchase of fresh apples

Respondents most often purchased fresh apples at least one time per week (37.9%) (Table 11.31).

Table 11.31: Frequency of purchasing fresh apples

	N	%
Everyday	0	0.0
2 – 3 times per week	18	8.0
Once a week	67	29.9
Once every two weeks	53	23.7
Once a month	61	27.2
Others	25	11.2
	224	100.0

The majority of respondents (75.0%) cited freshness as the variable they most often considered in their decision to purchase fresh apples from a retail store (Table 11.32).

Table 11.32: Variables respondents consider in their decision to purchase fresh apples

	Ranking					N	%
	1	**2**	**3**	**4**	**5**		
Freshness	112	30	16	5	5	168	75.0
Price	19	23	20	26	8	96	42.9
Colour	23	36	22	8	2	91	40.7
Size/shape	15	32	21	12	5	85	37.9
Texture	25	20	19	2	1	67	29.9
No bruises	6	13	13	8	2	42	18.8
Taste	3	15	15	8	1	42	18.8
Country-of-origin	3	2	12	9	5	31	13.8
Types of apples	4	9	9	3	4	29	12.9
Freedom from chemical residues		3	5	6	11	25	11.2
Clean	2	8	7	3	3	23	10.3
Quality	7	8	6	1		22	9.8
Labels on the apples		3	4	2	1	10	4.5
Freedom from pests	1	1	2	2	1	7	3.1
Smooth skin	1	2	3			6	2.7
Ripeness	2			3		5	2.2
Nicely packed			1	1	2	4	1.8
I can self select		1	1	1	1	4	1.8
Location	1	1		1		3	1.3
Nutritious		1		1		2	0.9
Smell		1			1	2	0.9
Organic		1	1			2	0.9
	224						

Price (42.9%), colour (40.7%), size and shape (37.9%) comprised the second most frequently cited group. Several respondents emphasised the absence of bruises (18.8%), the taste (18.8%) and texture (29.9%). However, both taste and texture can only be evaluated post-purchase and hence respondents must give consideration to a range of other variables. Both the country-of-origin (13.8%) and the type/variety of apple (12.9%) were also frequently cited.

In making their decision to purchase apples from a retail store, the most important variables included freshness, freedom from blemishes and bruises, chemical residues, pests and diseases, firmness and skin colour, size and shape, value for money and competitive price (Table 11.33).

Table 11.33: Importance of variables influencing respondents' decision to purchase fresh apples

	Mean	SD
Freshness	5.79[a]	0.49
Freedom from blemish and bruise	5.71[a]	0.56
Freedom from chemical residues	5.64[a]	0.66
Freedom from pests and disease	5.63[a]	0.71
Firmness	5.49[a]	0.82
Skin colour	5.46[a]	0.73
Value for money	5.35[a]	0.88
Competitive price	5.25[a]	0.93
Size/shape	5.22[a]	0.94
Variety	4.89[b]	1.12
Country-of-origin	4.75[c]	1.16
Origin of the fruit	4.64[d]	1.31
Label or brand	4.54[d]	1.29
Organic	4.44[d]	1.36
Availability of product info in-store	4.42[d]	1.25
Favourable prior purchase	4.41[d]	1.38
Fruit is prepacked	4.24[e]	1.29
In-store tastings	4.21[e]	1.39
Waxed	4.11[f]	1.59
Newspaper advertising/catalogues	3.74[g]	1.42

where 1 is "not at all important" and 6 is "very important"
those items with the same superscript are not significantly different at p = 0.05

Advertisements in printed newspapers and catalogues was considered the least important variable by respondents in making their decision to purchase fresh apples from a retail store.

Principal component analysis revealed five factors which collectively explained 82.6% of the variance (Table 11.34).

Factor One, with an Eigenvalue of 3.82, captured three variables (in-store tastings, availability of product information in-store and newspaper catalogues). These variables clearly described components associated with the "promotion" of fresh apples. The Cronbach's alpha for this construct was 0.79. Nevertheless, this construct was the least important in the respondents' decision to purchase fresh apples.

Table 11.34: Factors influencing respondents' decision to purchase fresh apples

	Factor				
	1	**2**	**3**	**4**	**5**
In-store tastings	0.822				
Availability of product info in-store	0.814				
Newspaper advertising/catalogues	0.782				
Freedom from chemical residue		0.944			
Freedom from pests and disease		0.940			
Origin of fruit			0.902		
Country-of-origin			0.899		
Competitive price				0.885	
Value for money				0.884	
Skin colour					0.883
Size/shape					0.830
Eigenvalue	3.823	1.802	1.288	1.116	1.053
Percent variance	19.16	17.04	16.38	15.33	14.65
Cumulative variance	19.16	36.19	52.58	67.91	82.56
Cronbach's alpha	0.786	0.915	0.877	0.807	0.739
Factor mean	4.12^{d}	5.64^{a}	4.69^{c}	5.30^{b}	5.34^{b}

where those items with the same superscript are not significantly different at p = 0.05

Factor Two, with an Eigenvalue of 1.80, was labelled as "integrity" as it had two variables (freedom from chemical residues and freedom from pests and diseases). This construct accounted for 17.0% of the variance. The Cronbach's alpha for this construct was 0.92, indicating very high reliability. With the highest mean score, this construct had the most significant impact on the respondents' decision to purchase fresh apples.

Factor Three, with an Eigenvalue of 1.29, had two variables (origin and country-of-origin) which were clearly indicative of the origin of the product. The Cronbach's alpha was 0.88. However, in making the decision to purchase fresh apples, this factor was only the third most important construct.

Factor Four captured two variables (value and competitive price). This factor was label1ed as "value". With a Cronbach's alpha of 0.81, this was considered highly reliable. This factor, which was of equal importance to Factor Five, was the second most important in the respondents' decision to purchase fresh apples from a retail store.

Factor Five was labelled as “physical appearance”. This suggested that the skin colour, size and shape of the apple were important influences in the respondents’ decision to purchase fresh apples. The Cronbach’s alpha for this construct was 0.74. This construct was the second most important in the respondents’ decision to purchase fresh apples.

Respondents were then asked which variables they most often associated with eight desired outcomes.

Most respondents (77.2%) cited freshness as the most important indicator of good taste (Table 11.35).

Table 11.35: The association between criteria utilised in the decision to purchase fresh apples with a good taste

Desired outcome 1: The food has a good taste	**Ranking**			**N**	**%**
	1	**2**	**3**		
Freshness	78	49	25	152	77.2
Skin colour	62	19	10	91	46.2
Firmness	18	19	25	62	31.5
Freedom from blemish and bruise	10	18	23	51	25.9
Country-of-origin	8	11	8	27	13.7
Size/shape	5	18	1	24	12.2
Freedom from chemical residues	2	6	7	15	7.6
Freedom from pests and diseases	1	3	6	10	5.1
Variety	5	3	1	9	4.6
Label or brand	1	3	5	9	4.6
Organic	3	2	3	8	4.1
Origin of the fruit	1	2	4	7	3.6
Favourable prior purchase	1		1	2	1.0
Waxed		1		1	0.5
Value for money	1			1	0.5
In-store tastings			1	1	0.5
Quality	1			1	0.5
Halal			1	1	0.5
	197				

To ensure that the apple purchased was delicious, other variables such as skin colour (46.2%), firmness (31.5%) and no blemishes and bruises (25.9%) were also considered by respondents. The price of the apple was observed to have little impact on the taste.

To ensure that the fruit was safe to eat, 71.8% of respondents cited freedom from chemical residues (Table 11.36).

Table 11.36: The association between criteria utilised in the decision to purchase fresh apples which is safe to eat

Desired outcome 2: The food is safe to eat	Ranking			N	%
	1	2	3		
Freedom from chemical residues	65	52	23	140	71.8
Freedom from pests and diseases	43	27	23	93	47.7
Freedom from blemish and bruise	19	16	12	47	24.1
Organic	15	14	17	43	22.1
Freshness	22	10	7	39	20.0
Waxed	10	7	9	26	13.3
Skin colour	10	1		11	5.6
Origin of the fruit	2	5	3	10	5.1
Country-of-origin	3		6	9	4.6
Firmness		6	2	8	4.1
Size/shape	1	2		3	1.5
Label or brand		1	2	3	1.5
Favourable prior purchase	1	2		3	1.5
Fruit is prepacked		1	1	2	1.0
Availability of product info in store	2			2	1.0
Halal	1		1	2	1.0
Place of purchase	1			1	0.5
	195				

Other variables which were most often associated with food safety were freedom from pests and diseases (47.7%), freedom from blemishes and bruises (24.1%), organic apples (22.1%) and freshness (20.0%). From where the apples had been purchased (0.5%) was perceived to have little impact on whether the fruit was safe to eat.

More than one half of the respondents (60.5%) consider freshness to be a good indicator of whether the fruit was nutritious (Table 11.37).

Fruit without chemical residues (36.4%), no blemishes and bruises (28.2%), organically grown (20.5%) and free from pests and diseases (20.0%) were also frequently associated with healthy and nutritious fruit. Other indicators included skin

colour (19.5%) and firmness (18.9%). Price was not associated with good health and nutrition.

Table 11.37: The association between criteria utilised in the decision to purchase fresh apples with health and nutrition

Desired outcome 3: The food is healthy and nutritious	Ranking			N	%
	1	2	3		
Freshness	63	40	15	118	60.5
Freedom from chemical residues	27	21	23	71	36.4
Freedom from blemish and bruise	22	16	17	55	28.2
Organic	20	12	8	40	20.5
Freedom from pests and diseases	15	13	11	39	20.0
Skin colour	20	12	6	38	19.5
Firmness	9	17	11	37	18.9
Waxed	2	1	8	11	5.6
Size/shape	3	5	2	10	5.1
Origin of the fruit	2	3	1	6	3.1
Favourable prior purchase	4	1		5	2.6
Label or brand	2	1	1	4	2.1
Variety	2	1		3	1.5
Fruit is prepacked	1		1	2	1.0
Availability of product info in store		1	1	2	1.0
Quality	2			2	1.0
In-store tastings	1			1	0.5
Newspaper advertising/catalogues			1	1	0.5
Halal			1	1	0.5
	195				

Competitive price (40.6%), followed by value for money (30.5%) and freshness (25.1%) were the variables most often associated with value for money (Table 11.38).

Conversely, those variables which were considered to have little association with the value judgement were freedom from pests and diseases (1.1%), availability of product information in-store (1.1%), quality (1.1%), intended use (0.5%) and Halal (0.5%).

Table 11.38: The association between criteria utilised in the decision to purchase fresh apples that represented good value for money

Desired outcome 4: The food represents value for money	Ranking			N	%
	1	2	3		
Competitive price	46	22	8	76	40.6
Value for money	32	12	13	57	30.5
Freshness	29	13	5	47	25.1
Label or brand	10	9	8	27	14.4
Size/shape	12	9	5	26	13.9
Variety	5	9	10	24	12.8
Firmness	8	6	7	21	11.2
Country-of-origin	3	7	6	16	8.6
Fruit is prepacked	11	2	1	14	7.5
Organic	5	4	3	12	6.4
Freedom from chemical residues	4	2	4	10	5.3
Origin of the fruit	1	7	2	10	5.3
Freedom from blemish and bruise	6	2	1	9	4.8
Newspaper advertising/catalogues	3	1	5	9	4.8
In-store tastings	1	4	3	8	4.3
Favourable prior purchase	3	3	2	8	4.3
Skin colour	5	1	1	7	3.7
Waxed		1	2	3	1.6
Freedom from pests and diseases		1	1	2	1.1
Availability of product info in store		1	1	2	1.1
Quality	2			2	1.1
Intended use	1			1	0.5
Halal			1	1	0.5
	187				

Freshness (46.1%) and firmness (43.5%) were the variables that were most often associated with a good texture or mouth feel (Table 11.39).

Other variables such as skin colour (38.3%), freedom from blemishes and bruises (32.1%), and size and shape (26.4%) were also considered good indicators of the desired texture or mouth feel.

Organic (3.1%), label/brand (2.6%) and prepacked (2.1%) were rarely associated with good texture and mouth feel.

Table 11.39: The association between criteria utilised in the decision to purchase fresh apples with good texture/mouth feel

Desired outcome 5: The food has good texture/mouth feel	Ranking			N	%
	1	2	3		
Freshness	45	32	12	89	46.1
Firmness	32	29	23	84	43.5
Skin colour	51	17	6	74	38.3
Freedom from blemish and bruise	13	30	19	62	32.1
Size/shape	24	14	13	51	26.4
Variety	6	1	4	11	5.7
Freedom from chemical residues	5	2	4	11	5.7
Waxed		1	7	8	4.1
Country-of-origin	2	3	1	6	3.1
Freedom from pests and diseases	1	2	3	6	3.1
Origin of the fruit	2		4	6	3.1
Organic	3	1	2	6	3.1
Label or brand	3	1	1	5	2.6
Fruit is prepacked	3		1	4	2.1
Favourable prior purchase	2	1		3	1.6
Value for money			1	1	0.5
In-store tastings		1		1	0.5
Quality	1			1	0.5
	193				

Organic production (63.6%) and freedom from chemical residues (58.7%) were most often associated with fruit that had been produced in a way that was good for the environment (Table 11.40).

Table 11.40: The association between criteria utilised in the decision to purchase fresh apples that was good for the environment

Desired outcome 6: The food has been produced in a way that is good for the environment	Ranking			N	%
	1	2	3		
Organic	89	13	15	117	63.6
Freedom from chemical residues	41	55	12	108	58.7
Freedom from pests and diseases	16	14	10	40	21.7
Freshness	10	3	2	15	8.2
Country-of-origin	5	3	6	14	7.6
Origin of the fruit	5	4	4	13	7.1
Label or brand	4	4	2	10	5.4
Freedom from blemish and bruise	3	3	2	8	4.3
Waxed	1	1	6	8	4.3
Availability of product info in-store	1	3	3	7	3.8
Skin colour	2	1	2	5	2.7
Firmness	1	1	3	5	2.7
Fruit is prepacked	3		2	5	2.7
Size/shape		3		3	1.6
Newspaper advertising/catalogues	2	1		3	1.6
Variety			1	1	0.5
In-store tastings	1			1	0.5
Halal			1	1	0.5
	184				

Freedom from chemical residues (48.4%) and organically grown (36.6%) were also most frequently associated with fruit that had been grown in such a way as to protect worker welfare (Table 11.41).

Table 11.41: The association between criteria utilised in the decision to purchase fresh apples that protects worker welfare

Desired outcome 7: The food has been produced in a way that protects worker welfare	Ranking			N	%
	1	2	3		
Freedom from chemical residues	41	27	10	78	48.4
Organic	31	15	13	59	36.6
Freedom from pests and diseases	11	8	5	24	14.9
Country-of-origin	12	5	3	20	12.4
Competitive price	10	7	2	19	11.8
Availability of product info in store	9	6	2	17	10.6
Origin of the fruit	10	2	4	16	9.9
Fruit is prepacked	9	3	3	15	9.3
Newspaper advertising/catalogues	4	4	4	12	7.5
Value for money	7	2	1	10	6.2
Label or brand	5	3	2	10	6.2
Freshness	3	4	2	9	5.6
Freedom from blemish and bruise	2	1	1	4	2.5
Intended use			4	4	2.5
Skin colour	1	1		2	1.2
Variety			2	2	1.2
Waxed	2			2	1.2
Size/shape		1		1	0.6
In-store tastings	1			1	0.6
Favourable prior purchase	1			1	0.6
Place of purchase	1			1	0.6
Quality	1			1	0.6
	161				

In determining if the fruit was guaranteed Halal, 38.7% of respondents mentioned the label or brand (Table 11.42).

Other variables most frequently cited included organic (27.9%), country-of-origin (26.8%), the origin of the fruit (23.8%), freedom from chemical residues (23.2%) and the availability of product information in-store (17.9%).

Waxed (0.6%), prepacked fruit (0.6%) and place of purchase (0.6%) were seldom associated with the Halal status of the fruit.

Table 11.42: The association between criteria utilised in the decision to purchase fresh apples that is guaranteed Halal

Desired outcome 8: The food is guaranteed Halal	Ranking			N	%
	1	2	3		
Label or brand	38	19	8	65	38.7
Organic	31	10	6	47	27.9
Country-of-origin	20	18	7	45	26.8
Origin of the fruit	12	15	13	40	23.8
Freedom from chemical residues	19	13	7	39	23.2
Availability of product info in-store	14	8	8	30	17.9
Newspaper advertising/catalogues	7	4	2	13	7.7
Freshness	7	2	2	11	6.5
Freedom from pests and diseases	5	3	2	10	5.9
Favourable prior purchase	6		1	7	4.2
Skin colour	1	2	1	4	2.4
Halal	3	1		4	2.4
Size/shape		2		2	1.2
Freedom from blemish and bruise	2			2	1.2
In-store tastings		1	1	2	1.2
Waxed	1			1	0.6
Fruit is prepacked	1			1	0.6
Place of purchase	1			1	0.6
	168				

The importance of the desired values were then ranked by respondents. Five of the desired values were ranked as being of similar importance to respondents in their decision to purchase fresh apples; food safety, health and nutrition, good taste, good texture and mouth feel and guaranteed Halal (Table 11.43).

Table 11.43: Importance of criteria respondents use in their decision to purchase fresh apples in a retail store

	Mean	SD
The food is safe to eat	5.74[a]	0.55
The food is healthy and nutritious	5.69[a]	0.63
The food has a good taste	5.69[a]	0.61
The food had good texture/mouth feel	5.47[a]	0.76
The food is guaranteed Halal	5.45[a]	1.15
The food represents value for money	5.31[b]	0.85
The food has been produced in a way that is good for the environment	5.00[c]	1.07
The food has been produced in a way that protects worker welfare	4.65[d]	1.29

where 1 is “not at all important” and 6 is “very important”

those items with the same superscript are not significantly different at p = 0.05

The second most important desired value ranked by respondents was value for money, followed by apples which had been produced in a way which had minimal impact on the environment. Protecting worker welfare was the least important value respondents considered in their decision to purchase fresh apples.

A total of 27.2% of respondents were often disappointed with the Halal status of the apples, while another 21.1% of respondents were often found to be dissatisfied with the safety of the fruit (Table 11.44).

Table 11.44: Occasions where respondents felt unhappy with the quality of fresh apples purchased with regard to the following desired outcomes

	F (%)							Mode	Median
	1	2	3	4	5	6	7		
The food is guaranteed Halal. N = 213	55.4	6.1	4.7	0.9	1.4	4.2	27.2	1.0	1.0
The food is safe to eat. N = 218	41.7	12.8	6.0	4.6	3.7	10.1	21.1	1.0	2.0
The food is healthy and nutritious. N = 218	38.1	14.7	7.8	6.0	5.0	11.0	17.4	1.0	2.0
The food represents value for money. N = 216	26.9	24.5	8.3	6.0	7.4	11.6	15.3	1.0	2.0
The food has a good taste. N = 218	20.2	26.2	11.5	7.8	10.1	11.0	12.8	2.0	3.0
The food has good texture/mouth feel. N = 214	23.4	23.4	13.1	5.1	6.5	15.9	12.6	1.0	3.0
The food has been produced in a way that is good for the environment. N = 205	38.5	12.7	10.7	6.8	7.8	13.2	10.2	1.0	2.0
The food has been produced in a way that protects worker welfare. N = 211	42.2	11.8	9.5	8.1	6.6	4.2	7.6	1.0	2.0

where 1 is “Never”, 2 is “One in ten times”, 3 is “One in five times”, 4 is “One in four times”, 5 is “One in three times”, 6 is “One in two times” and 7 is “Every time”.

Some 17.4% of respondents were also found to be often dissatisfied with the health and nutrition of the fruit and a further 15.3% of respondents did not believe that the fruit delivered good value for money. Some respondents (12.8%) were often unhappy with the taste, texture/mouth feel (12.6%) and how the apples had been produced in a way that was good for the environment (10.2%). Only 7.6% of the respondents were often disappointed with the way in which the apples had been produced and how that impacted on the welfare of the workers.

Nevertheless, more than half of the respondents (61.5%) had hardly ever or in the worst case, only one time in ten, had an unpleasant experience with the Halal status of the apples purchased. Most respondents rarely experienced disappointment with the food safety (54.5%) of the apples purchased, production methods that protected workers welfare (54.0%), health and nutrition (52.8%), good value for money (51.4%) or production that had an adverse impact to the environment (51.2%). Most respondents had never (or at worst one time in ten) experienced poor texture/mouth feel (46.8%) or poor taste (46.4%) in their purchase of apples from a retail store.

However, the reasons respondents most often gave for their dissatisfaction with the quality of the apples purchased was the poor texture (45.4%) and poor taste (41.6%) (Table 11.45).

Not fresh (37.8%), rotten (29.7%), bruises (29.7%) and a high price (23.8%) were the other reasons most frequently cited as having caused dissatisfaction.

Table 11.45: Reasons for dissatisfaction with the quality of fresh apples

	Ranking					N	%
	1	2	3	4	5		
Texture	35	26	16	4	3	84	45.4
Taste	28	21	16	9	3	77	41.6
Not fresh	45	10	7	4	4	70	37.8
Rotten	27	17	8	1	2	55	29.7
Bruises	18	26	1	8	2	55	29.7
Price	7	14	17	2	4	44	23.8
Too waxy	7	10	4	6	3	30	16.2
Size/shape	2	2	5	2	1	12	6.5
Prepacked	5		2	3	1	11	5.9
Skin colour	1	4	3	1	1	10	5.4
No label/no brand	2	1	1	3		7	3.8
Eaten by pests	2	1	2	1		6	3.2
No variety due to seasonal factor	3			1	1	5	2.7
I did not select properly	3					3	1.6
	185						

11.5 General view of fresh fruit and vegetables purchased

When respondents experienced dissatisfaction with the quality of the fresh fruit and vegetables they had purchased, most respondents were more selective on the next occasion that they purchased (Table 11.46).

Table 11.46: What respondents do when dissatisfied with quality of fresh fruit and vegetables purchased from a retail store

	Mean	SD
I am more selective the next time I buy	5.39[a]	0.99
I am always satisfied with my purchase	4.57[b]	1.14
I change shops	4.41[b]	1.29
I inform/complain to the seller	4.18[b]	1.44
I throw them out	4.04[c]	1.49
I change brands	4.01[c]	1.50
I purchase less	3.96[c]	1.48
I return it to the shop	3.66[d]	1.45
I stop buying	3.59[d]	1.64
I just eat it/cook it	2.76[e]	1.52
I do nothing	2.35[e]	1.57

where 1 is “I disagree a lot” and 6 is “I agree a lot”

those items with the same superscript are not significantly different at p = 0.05

Others may choose to discontinue purchasing from that shop or to advise the retailer about their dissatisfaction.

Other respondents simply discard the poor quality produce they had purchased, change brands or even purchase in a lesser quantity. Moreover, respondents who were very demanding might return the poor quality produce to the shop or discontinue purchasing the product.

Most respondents were confident that the majority of the fresh fruit and vegetables purchased were safe to eat (Table 11.47).

Table 11.47: Confidence level

	Mean	**SD**
How confident are you that the fresh fruit and vegetables that you consume are safe to eat	4.57	0.89

where 1 is “not at all confident” and 6 is “very confident”

Freshness (39.9%) was the most frequently cited variable used by respondents in determining that the fresh fruit and vegetables they had purchased were safe to eat (Table 11.48).

Past experience (23.6%), freedom from chemical residues (22.9%), the label (20.9%), the texture (20.9%), the country-of-origin (18.9%) and the place of purchase (15.1%) were also frequently cited. Price was seldom mentioned as an indicator that the fresh produce purchased from a retail store was safe to eat.

Table 11.48: Factors which lead respondents to conclude that the fresh fruit and vegetables purchased were safe or not safe to eat

	Ranking					N	%
	1	2	3	4	5		
Freshness	55	29	14	2	3	103	39.9
Based on previous experience	30	18	10	1	2	61	23.6
Freedom from chemicals residues	19	16	11	7	6	59	22.9
Label	22	14	11	6	1	54	20.9
Texture	19	18	12	3	2	54	20.9
Country-of-origin	18	18	8	5		49	18.9
Place of purchase	15	10	11	3		39	15.1
Quality	17	9	2	3	1	32	12.4
Safe to eat	10	7	6	4	1	28	10.9
Skin colour	9	10	4	2	1	26	10.1
Clean	5	12	5	1	2	25	9.7
Organic	8	2	5	8		23	8.9
Taste	5	6	4	3	1	19	7.4
Value for money	2	3	5	4	2	16	6.2
The way fruit and vegetables were grown	4	4	3	3		14	5.4
I always go to the same vendor	5	3	3	1	2	14	5.4
Reference from newspaper, internet, friends.	5	2	1	3	2	13	5.0
No smell	2	3	3	2	1	11	4.3
Prepacked	3	5	2			10	3.9
Free from bruises	1	2	3	2	1	9	3.5
Size	2	1	2	1		6	2.3
The food is healthy and nutritious	2		1			3	1.2
Variety		1		1		2	0.8
Chilled			1			1	0.4
	258						

Most respondents were quite confident about the way the Malaysian government was managing Halal and organically produced food (Table 11.49).

However, respondents were less confident about the way the Malaysian government managed several other issues such as waste management, water pollution, microbial contamination and chemical residues.

Table 11.49: Confidence level how Malaysian government manages the following

	Mean	SD
Halal	4.80[a]	1.15
Organically produced food	4.31[a]	1.20
Country-of-origin	4.13[b]	1.14
Sustainable production	4.02[b]	1.13
Fair trade	3.99[b]	1.16
Functional foods/probiotics	3.87[b]	1.24
Conservation biodiversity	3.82[b]	1.17
Recycling packaging	3.75[c]	1.32
Hormones, antibiotics and growth promotants	3.69[c]	1.21
Animal welfare	3.69[c]	1.22
Genetically modified fruit and vegetables	3.69[c]	1.26
Waste management	3.59[d]	1.29
Water pollution	3.58[d]	1.29
Microbial contamination	3.55[d]	1.29
Chemical residues	3.51[d]	1.38

where 1 is "not at all confident" and 6 is "very confident"
those items with the same superscript are not significantly different at p = 0.05

Most respondents (79.6%) had at some time boycotted a particular food due to food safety concerns (Table 11.50).

Table 11.50: Avoided or boycotted a particular food product due to food safety

	N	%
Yes	211	79.6
No	54	20.4
	265	

Most respondents (65.3%) however, boycotted a particular food product on only a temporary basis (Table 11.51).

Table 11.51: Methods of boycotting

	N	%
Temporary	113	65.3
Permanent	60	34.7
	173	

The main reason for deciding to boycott a particular food product was a food safety issue (30.0%) (Table 11.52).

Table 11.52: Reasons for boycotting

	N	%
Until proven safe to eat	79	30.0
Halal issues	56	21.3
Current issues in newspaper, television	43	16.3
China products	25	9.5
Quality of the product	21	7.9
Dissatisfied with the food product	18	6.8
Too expensive	7	2.7
Origin of the food	7	2.7
Government instruction	5	1.9
Retailers were not friendly	2	0.8
	263	

Respondents had also boycotted a particular food product when they had doubts about the Halal status (21.3%), followed by current issues reported in either the print or electronic media (16.3%).

11.6 Review

The analysis revealed that the frequency of purchasing fresh spinach was the highest compared to fresh apples and potatoes. This could be influenced by the shorter storage life of fresh spinach. Scientists from University Park in the United States of America demonstrated that fresh spinach will loose its nutritional value when stored for more than a few days (Storage time and temperature effects nutrients in spinach 2005). Most respondents were found to consume fresh spinach almost immediately after purchase. Furthermore, the high frequency of purchasing fresh spinach could be associated with the popularity of the vegetable among Malaysians. In Hussin (2008), apart from mustard, cabbage and convolvulus, spinach was mentioned as one of the leafy vegetables most often purchased by Malaysians.

Price was another factor which impacted on the frequency of purchasing fresh spinach. Spinach is much cheaper compared to the price of apples and potatoes. It was reported by the Malaysian Department of Statistics (The consumer price index Malaysia - January 2008) that the price indexes of some vegetables had declined in early 2008, which included spinach (-2.7%). Given that this survey was conducted during that period, a low price could justify the increased frequency of purchasing fresh spinach.

Although the findings revealed that fresh potatoes were infrequently purchased by respondents, potatoes are commonly used in preparing curries and soups.

Freshness was the most frequently cited variable which influenced the respondents' decision to purchase fresh potatoes, spinach and apples from a retail store. However, the indicators of freshness varied across the different types of fruit and vegetables (Lai et al. 1998). In the case of potatoes and apples, the physical appearance of the produce was described by the skin colour, texture, size and shape. For spinach, the physical appearance was visually assessed by the colour and the appearance of the leaves. Cleanliness (without soil) was also frequently cited by respondents in their decision to purchase potatoes and spinach. Von Alvensleben and Meier (1990), state quite emphatically that when purchasing fresh produce, 'consumers buy with their eyes'.

Since Malaysian consumers are very price sensitive (Malaysian market opportunities report n.d.), price was another variable frequently cited by respondents as influencing their decision to purchase fresh produce from a retail store. Indeed, price was more frequently cited by respondents compared to quality for all three products. This implies that respondents are prepared to trade-off quality in order to obtain a cheaper price when purchasing fresh fruit and vegetables. According to van der Pol and Ryan (1996), ideally, consumers seek the highest quality fresh fruit and vegetables at a lowest possible price. Nevertheless, both researchers indicated that consumers may be willing to pay more to obtain better quality food.

Since potatoes and apples were imported, the retail prices of both products were perceived to be higher than the price of spinach in the market, which was a concern for many respondents. This may also explain why the country-of-origin was among the most frequently cited variables by respondents in their decision to purchase fresh potatoes and apples. Potatoes imported into Malaysia originate from countries such as China, India, Australia, New Zealand and Indonesia (Rahim 2007). Due to the high demand for potatoes in Malaysia, about 70.0% of Indonesia's potato exports are destined for Malaysia (Adiyoga et al. 2001). Most Asian grown potatoes are valued for their versatility (multi-purpose usage) and low price compared to Western grown potatoes (One potato, two potatoes 2006). However, from the qualitative findings of this research, participants from the focus group discussions indicated that their preferences for potatoes from a specific country was highly dependent on the meal they intended to prepare. For example, Russet Burbank potatoes from the USA were commonly used to make french fries or baked potatoes.

With regard to apples, Monem and Collins (2000) reveal that Malaysian consumers prefer red apples imported from the USA, followed by Australia and New Zealand. In addition, both researchers have also demonstrated that Malaysian consumers prefer not to purchase apples imported from China.

When there is little opportunity to taste food in store, consumers often rely on the label or brand name. Verbeke et al. (2008) found that food quality labels on fresh fruit and vegetables focus on the origin and the safety aspects of the production method. Food quality labels seldom indicate that branded fresh fruit and vegetables taste any better than fruit and vegetables without labels. Batt and Sadler (1999) confirmed that for most actors in the supply chain (growers, retailers and consumers) labels on apples did not suggest that the apples tasted any better than unlabelled fruit. Fotopoulos and Krystallis (2003) demonstrated that labels on apples were not important for more than a third of the consumers in their study. Verbeke et al. (2008) found that the buyers and non-buyers of labelled fruit have different views about the labels. The non-buyers were only interested in labelled tomatoes if; (1) no other tomatoes were available; (2) no

information was available for other tomatoes; and (3) labelled tomatoes were proven to be more healthy.

A total of six variables were identified as being of equal importance to respondents in their decision to purchase fresh fruit and vegetables (Table 11.53).

Table 11.53: Importance of variables influencing respondents' decision to purchase fresh fruit and vegetables

Potatoes	Spinach	Apples
Freshness	Freshness	Freshness
Firmness	Free of wilting	Freedom from blemish and bruise
Freedom from chemical residues	Leaves	Freedom from chemical residues
Freedom from pests and diseases	Freedom from pests and diseases	Freedom from pests and diseases
Value for money	Colour	Firmness
Freedom from sprouting	Freedom from chemical residues	Skin colour
Skin colour	Freedom from blemish and bruise	Value for money
Intended use	Firmness of stem	Competitive price
Competitive price	Value for money	Size/shape
Tuber size		

The variables were grouped accordingly; physical appearance (freshness, firmness, freedom from pests and diseases, and colour), food safety (freedom from chemical residues) and value (value for money). An additional four variables were found to be influential in the respondents' decision to purchase fresh potatoes; freedom from sprouting, tuber size, intended use and competitive price. For spinach, respondents also valued good leaves, freedom from wilting and freedom from blemishes and bruises. For apples, respondents perceived freedom from blemishes and bruises, size/shape and competitive price to be important.

Principal component analysis identified different constructs according to the type of fresh produce (Table 11.54).

Table 11.54: Factors influencing respondents decision to purchase fresh fruit and vegetables

Potatoes	Spinach	Apples
Physical appearance, value and usage Prior experience Promotions	Quality Safe Convenience	Integrity Value and physical appearance Origin Promotions

In the case of fresh potatoes, five constructs were identified and grouped according to importance; value, physical appearance, usage, prior experience and promotion. The findings were compared to Batt (2009) where five constructs were also identified as influencing Australian consumers' decision to purchase fresh potatoes. However, the categorisations according to importance were entirely different between Australian and Malaysian consumers. For example, Malaysian consumers perceived value as being the most important factor when purchasing fresh potatoes, while Australian consumers emphasised the importance of freedom from pests and diseases, no sprouting, freshness and firmness. Price and value was the second most important variable for Australian consumers in making their decision to purchase fresh potatoes. Somewhat unexpectedly, issues surrounding food safety such as freedom from chemical residues and freedom from pests and diseases were found to be of little importance to Malaysian consumers when purchasing fresh potatoes from a retail store. This result however, was similar to the findings by Jemison et al. (2008), where consumers in the USA ranked source and skin quality as the most important characteristics when purchasing fresh potatoes. This was followed by size, skin colour, flesh colour, variety and cleanliness. Price and organic were the third group of variables ranked by respondents as having some impact on the purchase of fresh potatoes. If consumers were concerned with the usage of chemicals in the production of potatoes, organic would have a higher ranking.

In the case of fresh spinach, principal component analysis identified and grouped three constructs which influenced respondents' decision to purchase. The three constructs were quality, safety and convenience. Quality was further described by freshness, good leaves and freedom from wilting. This finding was similar to Slosser (2006), as visual

quality and appearance, which are indicators of value and quality, were the key factors which most influenced consumers' decision to purchase fresh spinach from a retail store. The quality of the spinach was assessed by the fresh appearance of the product. Consumers were found to be less likely to purchase spinach that looked old and unappealing. Wilting was another indicator of quality. Slosser (2006) described wilting as being affected by travel conditions, time to market and the presence or absence of refrigeration. Since wilting is noticeable and increases over time, this variable was considered important by respondents in their decision to purchase fresh spinach. Concepcion (2009) revealed that price was the main variable consumers in the Philippines used in their decision to purchase fresh vegetables (which included spinach). However, in the case of fresh spinach, price was not found to be among the more important factors influencing the respondents' decision to purchase, as fresh spinach was significantly cheaper (RM2 per bunch) compared to apples (RM1 per fruit – medium size) and potatoes (RM3.00/kg to RM4.00/kg – depending on the origin of the potatoes).

Safe (organic, size, favourable prior purchase and locally grown) was the second most important criteria ranked by respondents in their decision to purchase fresh spinach. In organic farming, the use of inorganic fertilisers and pesticides is prohibited. Implicitly, this revealed that respondents were concerned with the potential presence of chemical residues. Similarly, consumers in the Philippines rated food safety among the most important factors which influenced their decision to purchase fresh spinach (Concepcion et al. 2006). However, in the absence of pesticides, there is a high probability that pests and diseases will infect the crop, dramatically reducing the visual appearance. Slosser (2006) added that the presence of bugs and holes in the leaves may have a negative influence on the consumers' decision to purchase fresh spinach.

A total of five constructs were identified as influencing the respondents' decision to purchase fresh apples from a retail store. The constructs were integrity, physical appearance, value, origin and promotion. Respondents have shown their concern towards the presence of chemical residues and freedom from pests and diseases in their

decision to purchase fresh apples compared to potatoes and spinach. Baker (1999) confirmed that consumers in the USA placed greater importance on food safety attributes in their purchase of fresh apples. Malaysia is one of the major importers of Chinese apples (Issues paper for the import risk analysis for fresh apples fruit from the People's Republic of China 2008). According to Zeitner (2006), the over use of pesticides and fertilisers in apple production in China is common. Furthermore, in the absence of information from government agencies with regards to the origin of most imported goods, respondents placed greater importance on the country-of-origin in their decision to purchase fresh apples.

Prescott et al. (2002) confirmed that Malaysian consumers were less concerned about the production systems involved in their food choice, and placed greater concerns on health, natural ingredients, weight control and convenience. Due to the time period between both studies, the demand and needs of consumers have changed, and thus the findings of this study reveal that Malaysian consumers are beginning to learn and acquire more information about the production process for the food they have purchased.

The physical appearance (skin colour, size/shape) and value (price and value for money) were ranked as the second most important constructs in the respondents' decision to purchase fresh apples in Malaysia. Sadler (1997) and Batt (2004) however, identified firmness as the most important criteria used by consumers in Western Australia when purchasing fresh apples. The visual appearance (freedom from blemishes, colour and size) and variety apparently came after firmness. Similar to Peneau et al. (2006), physical appearance was the second most important variable in the respondents' decision to purchase fresh apples. However, when the selection of apples was made based on appearance, consumers may have different preferences according to familiarity, attitudes, age, gender, and the frequency of purchase (Harker 2001; Peneau et al. 2006).

The findings reveal that the promotional variables (in-store tastings, the availability of product information and newspaper advertising/catalogues) were the least important criteria respondents considered when purchasing fresh apples from a retail store. Despite the relatively low importance consumers attach to the promotional variables, Batt and Sadler (1999) indicated that consumers still respond to promotions.

Freshness and physical appearance were the most frequently cited group of variables to indicate good taste and good texture/mouth feel (Table 11.55).

Table 11.55: Group of variables respondents relate with good taste and good texture/mouth feel

Desired outcome	Potatoes	Spinach	Apples
The food has a good taste	Freshness Physical appearance: firmness, flesh colour, skin colour	Freshness Physical appearance: colour, leaves, free of wilting, firmness of stem, freedom from blemishes and bruises	Freshness Physical appearance: skin colour, firmness, freedom from blemishes and bruises
The food has good texture/mouth feel	Physical appearance: Firmness Freshness Physical appearance: flesh colour, skin colour	Freshness Physical appearance: firmness, colour, free of wilting, good leaves, freedom from blemishes and bruises	Freshness Physical appearance: firmness, skin colour, freedom from blemishes and bruises, size/shape

Firmness and colour were the most common variables which described the physical appearance of all three fresh products and were most often associated with good taste and good texture/mouth feel. British and Danish consumers were reported to have strong preferences towards the freshness of apples (Jaeger et al. 1998). Fresh apples, were described as hard and crisp, with a juicy texture, a grassy odour and white flesh, compared to apples which had become mealy, with a spongy texture and soapy flavour. Dinehart et al. (2006) identified appearance, texture and taste as important determinants influencing the consumption of fresh vegetables. Additional attributes describing the physical appearance depended on the characteristic of the produce itself; such as flesh

colour for fresh potatoes; leaves free from wilting and free from blemishes and bruises for fresh spinach; free from blemishes and bruises and size/shape for fresh apples.

Price and value were less often associated with good taste. This indicated that paying a higher price did not imply that fresh produce would taste any better. Organically grown fruit and vegetables are usually associated with the need for consumers to pay a higher price. However, whether organic produce tastes any better than conventionally grown produce is debatable. According to Fillion and Arazi (2002), the belief that organic produce does taste better than conventionally grown produce is a major consideration influencing the consumers' willingness to pay a premium price. Lester (2006) found that consumers who do not purchase organic food believed that organic fruit and vegetables did not taste any better than conventionally grown produce. In contrast, research undertaken in Australia revealed that the majority of respondents who purchased organic produce believed that organic food was much tastier than conventional food (Lea and Worsley 2005). Nevertheless, the high cost involved was found to present a significant barrier for consumers in purchasing organically grown food.

Freedom from chemical residues and freedom from pests and diseases were the two most frequently cited variables which indicated that the fresh produce was safe to eat (Table 11.56).

Table 11.56: Group of variables respondents relate with food safety

Desired outcome	Potatoes	Spinach	Apples
The food is safe to eat	Freedom from chemical residues Freedom from pests and diseases	Freedom from chemical residues Freedom from pests and diseases	Freedom from chemical residues Freedom from pests and diseases

However, these two variables were considered to be negatively correlated, for if the produce was to be free from pests and diseases, chemical pesticides were invariably used. Concepcion et al. (2006) reported that farmers in Mindanao believed that

consumers placed most importance on freshness and price, and were not concerned about the presence of chemical residues. Quite the opposite, the results of this study suggest that Malaysian consumers are very concerned about chemical usage in the production of fresh potatoes, spinach and apples. The Malaysian government has introduced better farming practices to reduce the usage of chemicals and hazardous substances through the Malaysian Farm Accreditation Scheme (SALM) and Malaysian Organic Scheme (SOM), as well as through revising the Pesticides Act 1974 (Ahmad and Juhdi 2008). However, little information is available to consumers.

The findings of this research concur with Baker (1999) where consumers, known as "Safety Seekers", have shown a greater preference for reduced pesticides when purchasing Red Delicious apples. Baker (1999) added that consumers were found to be willing to pay substantially more for fresh produce grown with less pesticide. This issue, however, was not included in this research. Although consumers prefer to purchase apples grown with fewer pesticides, Baker (1999) mentioned that the supply of this type of produce was limited. Ahmad and Juhdi (2008) concur with Baker (1999), for they found that products with fewer chemicals such as organic produce were only available from selected supermarkets in Malaysia.

Freshness was the most frequently cited variable for all three products that was related to health and nutrition (Table 11.57).

Table 11.57: Group of variables respondents relate with health and nutrition

Desired outcome	Potatoes	Spinach	Apples
The food is healthy and nutritious	Freshness, freedom from chemical residues Freedom from pests and diseases, organic, firmness, skin colour, flesh colour	Freshness Organic, colour and freedom from chemical residues	Freshness Freedom from chemical residues, freedom from blemishes and bruises, organic and freedom from pests and diseases

Eating fresh fruit and vegetables are fundamental elements of healthy eating (Paquette 2005). Willett (1990) [cited in Beech et al. 1999] suggested that increasing the daily consumption of fresh fruit and vegetables could reduce lung cancer, as well as the risk of other cancers of the stomach, pancreas and colon. Consumers consider fresh produce to be more nutritious than processed products (Shewfelt 2006). By examining the visual features of the product (freshness), consumers conclude that the food to be purchased is more healthy and nutritious.

Other variables, which revolved around healthy and nutritious food included: freedom from chemical residues and organic. Organic is often associated with food that is perceived to be more healthy and nutritious. For example, Worthington (2001) found that organic crops contained significantly more vitamin C, iron, magnesium and phosphorus and less protein, nitrates and lower amounts of heavy metals compared to conventionally grown crops. Lea and Worsley (2005) demonstrated that the majority of Australian consumers believed that organic food was more healthy than conventional food. This argument is also supported by Lester (2006), who added that most consumers (which include high users of organic and the non-consumers of organics), believed that fruit and vegetables produced without pesticides were more healthy. Consumers in the UK mentioned that organically grown food was more natural and healthy than conventionally produced food (Yiridoe et al. 2005).

Value for money and freshness were the two most frequently cited variables that were associated with value for money (Table 11.58).

Table 11.58: Group of variables respondents relate with value for money

Desired outcome	Potatoes	Spinach	Apples
The food represents value for money	Competitive price, value for money, freshness Tuber size, intended use, label/brand	Value for money, freshness Spinach is sold loose, variety and spinach is tied in bunches	Competitive price, value for money, freshness Label/brand, size/shape, variety and firmness

In Batt (2009), value (competitive price and value for money) was considered to be the second most important variable in the respondents' decision to purchase fresh potatoes from a retail store. While, competitive price was frequently cited by respondents in their decision to purchase fresh potatoes and apples, this variable was not cited in the decision to purchase fresh spinach. As discussed earlier, this arose because the price of spinach was so much cheaper than the other two products.

Beside cost, Caswell (2000) described value in terms of the benefits the product delivered. Tuber size, intended use and label/brand were indicators of value for the purchase of fresh potatoes. From the qualitative findings, participants from the focus group discussions revealed how the purchase of fresh potatoes from a retail store very much depended on the meal that was to be prepared. For example, small size potatoes were used for curries, while Russet Burbank potatoes from the USA were best for making fries. Caswell (2000) included convenience as a criteria which further described the value attributes. As suggested by Batt (2009), female consumers, who are involved directly in preparation of the meal for the household, placed greater importance on the size, shape and firmness when purchasing fresh potatoes, given that these variables impact on the amount of wastage during the food preparation process.

As for spinach, value signifies variety, whether the spinach is sold loose or tied in bunches. Findings from the qualitative study suggested that some participants prefer to purchase spinach that is tied in bunches, given that the price is relatively cheaper. In contrast, other participants indicated that they dislike purchasing pre-packed spinach, for it may contain defect plants. These consumers perceived value as the ability to self-select their fresh spinach.

Value indicates label/brand, size/shape, variety and firmness of apples. According to Bowbrick (1992) [cited in Batt and Sadler 1999], a label attached to a product which contains information about the product origin, aims to convince consumers about the quality, safety and value for money of the product. However, in contrast to the findings of this research, the majority of consumers in Western Australia suggested that labels

on apples did not indicate quality, nor did labels bring any additional value (Batt and Sadler 1999).

Organic, freedom from chemical residues and freedom from pests and diseases were frequently cited by respondents as being associated with fresh fruit and vegetables that had been produced with minimal impact on the environment (Table 11.59).

Table 11.59: Group of variables respondents relate with food that has been produced in a way that is good for the environment and protects worker welfare

Desired outcome	Potatoes	Spinach	Apples
The food has been produced in a way that is good for the environment	Organic Freedom from chemical residues, freedom from pests and diseases, locally grown	Organic, freedom from chemical residues Freedom from pests and diseases, locally grown	Organic, freedom from chemical residues Freedom from pests and diseases
The food has been produce in a way that protects worker welfare	Freedom from chemical residues Organic, locally grown	Freedom from chemical residues Organic, locally grown	Freedom from chemical residues, organic Freedom from pests and diseases, country- of-origin

According to Yiridoe et al. (2005), the concept of organically grown food is commonly related to the production process, which includes aspects such as natural production systems, environmental friendliness and the limited usage of chemicals in the production process. Hansen (2001) [cited in Yiridoe et al. 2005], indicated that consumers value the importance of organic by examining two aspects; the general attributes of the product (food safety, health concerns, impact on the environment, animal and worker welfare), as well as the commodity-specific attributes (appearance, taste and freshness). Consumers' attitudes towards these criteria may influence their decision to purchase organically grown produce. For example, although solid domestic waste is a major environmental problem in Malaysia (Ahmad and Juhdi 2008), this may or may not be the reason why consumers purchase organic food. In Huang (1996), and Hutchins and Greenhalgh (1997) [cited in Yiridoe et al. 2005], consumers show

more concern towards health and food safety, rather than the environmental impact when purchasing organically grown food. In contrast, Davies et al. (1995) indicated that concern for the environment was one of the main factors which influenced consumers' decision to purchase organic produce. The finding of this research concurs with Ahmad and Juhdi (2008), who revealed that organic buyers in Malaysia believe that organic product helps to protect the environment.

Freedom from chemical residues, organic and where the crop was grown were also perceived to be related to the protection of worker welfare. According to Hanson et al. (2004), farmers who were being exposed to the regular application of pesticides, have a higher chance of experiencing chronic illness, compared to the general population. Thrupp (2002) [cited in Hanson et al. 2004] suggested that farmers who were concerned about the usage of chemical pesticides were more motivated to change to organic farming. As indicated by the Soil Association in the UK [cited in Morgan and Murdoch 2000], organic farming practices involve natural production systems (with the absence of chemicals), that enhance the farm environment and lessen the social and ecological impact of agricultural production systems on the environment. Caswell (2000) and Yiridoe et al. (2005) further demonstrated that among the key differences between organically grown and conventionally grown produce, organic production placed more importance on animal welfare, genetic modification, environmental impact, pesticide use and worker welfare. Clearly, respondents demonstrated the relationship between credence cues (freedom from chemical residues, freedom from pests and diseases, organic and the origin of the produce) and the method of production.

Origin and label/brand were the two most frequently cited variables which indicated that the food was Halal (Table 11.60).

Table 11.60: Group of variables respondents relate with Halal

Desired outcome	Potatoes	Spinach	Apples
The food is guaranteed Halal	Locally grown, label/brand, country-of-origin Place of purchase, availability of product information in-store, organic	Locally grown Organic, freedom from chemical residues	Label/brand Organic, country-of-origin, origin of the fruit, freedom from chemical residues, availability of product information in-store

Although fresh fruit and vegetables are naturally Halal, with the impact of globalization, consumers are exposed to a wider range of foreign products in the market. In the absence of product information about the origin of the product and the manner in which the food has been produced, consumers may doubt the Halal status of the product. For example, Muslims consumers have concerns about the application of animal manure, especially from pigs, which are often used as fertiliser. It is mandatory for producers in the fresh produce industry in the USA to label their produce with County-of-Origin Labelling (COOL) to provide shoppers with information on the origin of the product (Mabiso et al. 2005).

Although different criteria were related to different desired values, there were similarities in a number of variables utilised by respondents that were related to specific desired values.

Respondents ranked the importance of the desired values in a very similar manner for all three products (Table 11.61).

Table 11.61: Importance of criteria respondents use in their decision to purchase fresh fruit and vegetables in a retail store

Potatoes	Spinach	Apples
The food is safe to eat. The food is healthy and nutritious. The food is guaranteed Halal. The food has a good taste. The food had good texture/mouth feel.	The food is healthy and nutritious. The food is safe to eat. The food is guaranteed Halal. The food has a good taste. The food had good texture/mouth feel.	The food is safe to eat. The food is healthy and nutritious. The food has a good taste. The food had good texture/mouth feel. The food is guaranteed Halal.

Respondents preferred to purchase fresh fruit and vegetables that were safe to eat, healthy and nutritious, guaranteed Halal, with a good taste and good texture/mouth feel. Similarly, Bordeleau et al. (2002) revealed that when talking about the quality of fresh fruit and vegetables, consumers emphasised the food safety and nutritional aspects of the product, as well as the sensory parameters.

In terms of the place of purchase, consumers' preferences for fresh fruit and vegetables which are safe, nutritious and guaranteed Halal can be most easily met by the modern retailers. This finding was supported by Berdegue et al. (2005), who indicated how supermarkets have the capacity to invest and practice new technologies to implement higher safety standards. The modernisation and development of traditional retailers should be in line with the changes and needs of consumers who are demanding safer and healthier food. Reardon and Berdegue (2002) suggested that traditional retailers should seek to improve the quality of services (cleanliness and safety measures) rather than to concentrate on product quality.

Although most fruit and vegetables are Halal, respondents were often dissatisfied with the Halal status of all three products (Table 11.62).

Table 11.62: Occasions where respondents felt unhappy with the quality of fresh fruit and vegetables purchased with regard to the following desired outcomes

Potatoes	Spinach	Apples
The food is not guaranteed Halal.	The food is not guaranteed Halal.	The food is not guaranteed Halal.
The food is unsafe to eat.	The food is unhealthy and not nutritious.	The food is unsafe to eat.
The food is unhealthy and not nutritious.	The food is unsafe to eat.	The food is unhealthy and not nutritious.
The food does not represent value for money.	The food does not represent value for money.	The food does not represent value for money.
The food has a poor texture/mouth feel.	The food has a poor texture/mouth feel.	The food has a bad taste.
The food has a bad taste.	The food has a bad taste.	The food has a poor texture/mouth feel.
The food has not been produced in a way that is good for the environment.	The food has not been produced in a way that is good for the environment.	The food has not been produced in a way that is good for the environment.
The food has not been produced in a way that protects worker welfare.	The food has not been produced in a way that protects worker welfare.	The food has not been produced in a way that protects worker welfare.

Respondents were often dissatisfied with the safety of potatoes and apples and the health and nutritional value of spinach. These findings concur with Salleh et al. (2007), who mentioned that consumers were concerned about food safety, particularly in terms of pesticide residues in their purchase of fresh produce. Respondents in this study have a strong reason to be alarmed about the safety of the fresh fruit and vegetables given that it was reported by Jackson (2008), who indicated that Malaysian authorities had found melamine in the fruit and vegetables imported from China. Given that fresh produce from China makes up more than three-quarters of the imported fruit and vegetables in the Malaysian market, the Health Minister of Malaysia has assured worried consumers that fresh produce imported from China is safe for consumption (Malaysia - fruits and veggies from China safe to eat 2008). The Ministry of Health Malaysia further explained that fresh produce imported from China has been classified under Level 4 (Surveillance Examination) of the Food Safety Information System of Malaysia, which signifies that consignments are permitted to enter the country after samples have been taken for testing. Malaysian consumers should not be concerned over the safety level of the fresh fruit and vegetables available in the Malaysian market,

given that a total of 57 samples of fruit and vegetables from China were found to be melamine-free (Malaysia - fruits and veggies from China safe to eat 2008).

Locally grown vegetables were also perceived to be safe for consumption. The Agri-Food and Veterinary Authority of Singapore an assurance that fresh vegetables imported from Malaysia were not affected by any cancerous pesticides (Nie 2007). In promoting and ensuring the quality and food safety of fresh produce, farmers in Malaysia are being encouraged to adopt several Good Agricultural Practice (GAP) schemes (Salleh et al. 2007). For example, under the Malaysian Farm Accreditation Scheme (SALM), farmers must conform to several requirements before a certificate of conformity is issued. The requirements include: (1) farm inspections, where the type of land is inspected in order to identify any unknown materials that may be toxic. Water for irrigation must be from a clean source and not polluted with industrial waste; (2) verification of farm practice, which ensures that farmers must not use components such as genetically modified planting materials and industrial waste as fertilisers. Only registered pesticides may be applied to the crops planted and recommended rates of pesticides used as stated on the labels; and (3) residue analyses of farm produce and water, where samples of produce from the farm are analysed for pesticide residues and heavy metals. Given that various GAP schemes may enhance the level of consumers' confidence with regards to the quality and safety of locally grown fresh produce, Salleh et al. (2007) mentioned that the government may make it mandatory for farmers to implement these schemes.

The study revealed that for all three products, the respondents were least dissatisfied about the manner in which the crops produced had impacted on the environment and worker welfare. While these two areas were of least concern to the consumers, it is an area of interest for the government of Malaysia. Salleh et al. (2007) mentioned that among the motives for the government to encourage farmers to adopt GAP is the government's concern for the environment (such as the amount of pesticide residues disposed of in soil or in rivers and severe soil erosion) and to ensure the welfare of

farm workers (which includes a proper dress code for farmers spraying pesticides and concerns for the health and well-being of farmers).

Cross-tabulations were conducted to identify which group of respondents (according to clusters) were more or less dissatisfied with which desired outcomes. The results indicated that there were no significant differences between the clusters and each desired outcome that respondents were dissatisfied with. This indicated that the dissatisfaction with the quality of fresh fruit and vegetables was not related to the place of purchase. Respondents' dissatisfaction with the purchase of fresh produce was more related to the product itself.

The level of consumer dissatisfaction was highly dependent on the type of product, type of consumer, and the consumers' expectations of the product (Adebanjo 2001). The main reasons for dissatisfaction revolved around freshness, the appearance of the fresh produce, taste (experience quality) and price (Table 11.63).

Table 11.63: Reasons for dissatisfaction with the quality of fresh fruit and vegetables

Potatoes	Spinach	Apples
Rotten	Not fresh	Texture
Not fresh	Easily wilted	Taste
Too soft	Price	Not fresh
Sprouting	Eaten by pests	Rotten
Taste	Not clean	Bruises
Price	Contains chemical	Price

Beside freshness, the respondents showed a much greater concern for the taste of potatoes and apples compared to spinach. In the case of apples, Batt and Sadler (1999) indicated that soft and floury apples represent poor quality, which signified that the fruit has been stored too long or kept under poor conditions.

12. Discussions and conclusions

12.1 Chapter outline

This final chapter seeks to conclude the thesis by directly addressing the research objectives. The discussion will begin with a summary of the respondents involved in this study. Next, the discussion on quality and store choice attributes will be presented. The findings from the previous chapters on respondents' purchase of fresh/chilled meat and fresh fruit and vegetables will then be synthesised in order to evaluate any similarities or differences in the purchase of the two types of food product. The managerial implications of the findings are then presented. Several limitations of the study are also outlined, followed by recommendations for future research in which this study could be extended.

12.2 Summary of the respondents

The sample for both surveys consisted of 554 respondents living in the Klang Valley region. The majority of respondents in this study were females, aged between 26 and 44 years old, most of who were married and were of Malay descent. Most respondents from both surveys possessed at least an undergraduate degree or a professional certificate. The majority of respondents were employed either within the private sector, the government sector or owned their own business. In terms of income, most respondents for both surveys were from the middle income group, earning between RM2,000 to RM4,000 per month.

From both surveys, the findings revealed that most respondents had three or four people living in the same household, where they had at least one child under the age of 18 who lived together in the same household. Overall, the findings from both surveys found that the residential areas of the respondents were scattered around the Klang Valley region.

In trying to improve the response rates and reducing fatigue of both the field workers and the respondents, surveys were collected through an approach where both surveys were conducted during the same time period (10 am to 8 pm everyday

for a whole week) and in the same place (stationed at a particular retail outlet for a whole week). The researcher found this approach successful and as a result of this, the samples drawn for both surveys possessed similar characteristics.

With regards to the overall sample for this study, several limitations are identified: (1) the lack of participation from mature aged respondents; and (2) the low response rate from other ethnic groups such as the Chinese and Indian. Furthermore, expatriates who were residing in the Klang Valley region were purposefully excluded from participating in the survey as this study sought to capture the perceptions and experiences of Malaysian consumers when purchasing fresh food from a retail store. Therefore, the findings from this study may not represent the larger population residing in the Klang Valley region. By including more respondents from the mature age group, and through involving more Chinese, Indian and ethnic groups from Sabah and Sarawak, it is hoped that those researchers which wish to replicate this study will get a better representation of the population in the Klang Valley.

12.3 Conclusions

12.3.1 Quality

Objective 1: To gain an understanding of how consumers describe quality in purchasing fresh/chilled meat and fresh fruit and vegetables.

Freshness and cleanliness were among the two most frequently cited variables given by respondents when they thought about the quality of the fresh/chilled meat and fresh fruit and vegetables purchased from a retail store (Table 12.1).

Table 12.1: Variables respondents consider when they think about the quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (82.8%) Halal (57.6%) Cleanliness (43.6%)	Freshness (93.2%) Price (40.9%) Cleanliness (31.2%)

Given that the characteristics of fresh/chilled meat and fresh fruit and vegetables are very different from each other, it was no surprise to find that the attributes which defined freshness for both food products was also very different. The variables which described freshness will be further discussed in the next section. Beside freshness, the findings also revealed that Halal was frequently cited when respondents thought about the quality of the fresh/chilled meat they purchased from a retail store. This finding concurs with Riaz and Chaudry (2004) who mentioned that Halal was perceived to offer the highest standard of quality for Muslim and for many non-Muslim consumers.

When comparing between the indicators of quality, price was the second most frequently cited variable for fresh fruit and vegetables, whereas price was the fourth most frequently cited variable for fresh/chilled meat. This does not mean that consumers care less about the price when thinking about meat, for as indicated by Becker et al. (2000), consumers do not always assume that a higher price will lead to superior quality.

A total of seven variables were afforded the highest measure of agreement when respondents described the meaning of quality for fresh/chilled meat and fresh fruit and vegetables (Table 12.2).

Table 12.2: The meaning of quality of fresh food

Quality means that the product …	
Fresh/chilled meat	**Fresh fruit and vegetables**
is fresh. is safe to eat. is guaranteed Halal. is nutritious. is free from chemical residues. is free from pests and disease. I will not be disappointed when I eat the product. is free from antibiotics/growth promotants. will taste good. I will be able to use most if not all of the product I have purchased. is good value for money.	is fresh. is safe to eat. is free from chemical residues. is nutritious. I will not be disappointed when I eat the product. is good value for money. is free from pests and disease.

The quality of both types of food products revolved around freshness, food safety (safe to eat, free from chemical residues, free from pests and disease), nutrition and value (will not be disappointed when eating the product and good value for money). These findings concur with Wandel and Bugge (1997).

Given that the characteristics are different for both products, respondents in the fresh/chilled meat survey also considered several additional criteria which signified quality. These variables included Halal, the meat being free from antibiotics or growth promotants, good taste and the respondents' capacity to use most of the product purchased. Taste, which was perceived to be an indicator of good quality, was not present in the findings from those who responded to the fresh fruit and vegetables survey. As mentioned by Abbott (1999), besides nutritional value, chemical constituents, mechanical properties, functional properties and defects, quality encompasses sensory properties which were described by the appearance, texture, taste and aroma.

Principal component analysis identified food safety as the most important construct in the respondents' evaluation of quality for both fresh/chilled meat and fresh fruit and vegetables (Table 12.3).

Table 12.3: Factors influencing quality of fresh food

Fresh/chilled meat	Fresh fruit and vegetables
Safe Meat production Utility	Food safety issues and value for money Utility of packaging

However, different variables were utilised by respondents when describing that the food was safe to eat. Freshness and food that is safe to eat was indicative of the safety for fresh/chilled meat, whereas freedom from chemical residues, pests and diseases, safe to eat and nutritious were indicative of the construct for fresh fruit and vegetables. However, without a quality signal such as labelling, Caswell (2000) suggested that consumers will have difficulty in judging the amount of pesticide residues and the potential contamination of the food by foodborne pathogens.

Meat production was identified as the second most important criteria respondents considered in assessing the quality of the fresh/chilled meat they purchased. Respondents were concerned about the environment, farmers welfare and animal welfare. These findings concur with McEachern and Schroder (2002), where high-involvement consumers, who are willing to spend time, effort, money and actively seek product information, demand both tangible quality attributes (freshness) and intangible quality attributes (animal welfare, production aesthetics and rural sustainability) when purchasing fresh/chilled meat. However, the findings did not reveal or suggest that similar ethical considerations for the environment or farmers' welfare played any role in signifying the quality of fresh fruit and vegetables. Wandel and Bugge (1997) found that only 15.0% of respondents gave environmentally sound production first priority in determining the quality of fresh fruit and vegetables. Other variables such as taste, freshness, appearance and nutritional value were found to be significantly more important in determining the quality of fresh fruit and vegetables. Ethical issues were found to be of more concern for farmers than consumers, given that most consumers have insufficient knowledge about food production systems and practices (Borsari 2003).

12.3.2 Store choice

Objective 2:

2a. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional outlet).

2b. To identify any significant difference in the importance of these quality cues by the place of purchase (modern retail outlet or traditional outlet).

2c. To segment respondents according to the importance of these quality cues in purchasing fresh/chilled meat and fresh fruit and vegetables by their preferred retail store.

The second objective for this research study revolved around consumers store choice behaviour when purchasing fresh food. The data analysis for consumers' store choice behaviour revealed several similarities and differences in the purchase of fresh/chilled meat and fresh fruit and vegetables from their preferred retail store. The first similarity identified was in terms of the most preferred place to purchase

both fresh food products. The study found that traditional markets were the most preferred place to purchase fresh/chilled meat (66.4%) and fresh fruit and vegetables (53.5%).

The study also revealed that there were no substantial differences in terms of the frequency of purchase, where 66.2% of fresh/chilled meat shoppers and 68.7% of fresh produce shoppers purchased these fresh food items at least one time per week.

Freshness and price were the two variables most frequently cited by respondents for both surveys in their choice of retail store (Table 12.4).

Table 12.4: Variables respondents consider in their decision to purchase fresh food from their most preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (85.2%)	Freshness (83.3%)
Price (69.6%)	Price (73.7%)
Cleanliness (54.0%)	Variety/a lot of choices (27.0%)
Halal (39.2%)	Quality (25.6%)
Variety/a lot of choices (25.2%)	Cleanliness (23.3%)

However, freshness was described differently according to the place of purchase. In the traditional markets, freshness of the meat sold was determined by its 'warmth', given that the chicken or cattle had been slaughtered that same day (Goldman and Hino 2005). Furthermore, in determining the freshness of the meat, shoppers who purchased from the traditional market were allowed to touch the meat that was being displayed on retail counters. In contrast, Hsu and Chang (2002) and Krystallis et al. (2007) described how the freshness of the meat sold in most modern retail outlets was maintained by the use of chillers and freezers.

As for vegetables, Goldman et al. (1999) described how the freshness of vegetables was maintained in traditional markets by constantly trimming and spraying the produce with water. The situation is again different in most modern retail outlets. In order to keep vegetables fresh, Dolan et al. (1999) found that horticultural producers have to comply to certain quality standards, where vegetables are picked, prepared, fully labelled and transported to supermarket shelves within 48 hours. The

freshness of fruit and vegetables sold in supermarkets was determined by the label that contained information regarding the date of packaging and “use by” date.

Price was also associated with the place of purchase. Goldman et al. (1999), Berdegue et al. (2005) and Tam (n.d.) suggested that fresh food products in most traditional markets were generally cheaper than those purchased from modern retail outlets. On the other hand, Hsu and Chang (2002) revealed that fresh meat purchased from the traditional markets in Taiwan was generally more expensive compared to the price offered by supermarkets. Given that the price of fresh food products in the modern retail outlets and traditional markets was not recorded in this study, it was not possible to conclude which retail store offered the best price for their shoppers.

The concept of Halal emerged as one of the most frequently cited variables by respondents in their decision to purchase fresh/chilled meat from a retail store. Halal is most commonly related to the consumption of meat, because it involves the method by which the animal has been slaughtered. On this basis, Halal is seldom related to the consumption of fresh fruit and vegetables. In a Muslim country such as Malaysia, the concept of Halal is an essential prerequisite for consumption (Shafie and Othman 2006). Riaz and Chaudry (2004) agree that it is a Muslims’ religious obligation to make an effort to obtain and consume food that is Halal. This study concludes in a similar manner to Bonne and Verbeke (2006), that the role of religion is one of the most important factors influencing the shoppers’ decision to purchase fresh/chilled meat from a retail store.

In the absence of any certification to guarantee compliance with Halal procedures for fresh/chilled meat sold in traditional markets, consumers rely on their most trusted source, which is their preferred butcher/vendor. As demonstrated by Bonne and Verbeke (2006), personal trust with the consumers’ preferred butcher replaces the institutionalised quality signals (labels) provided by third party Halal assurances. Similarly, Ahmed (2008) reveals that the majority of Muslims in the UK purchased meat from local butchers because they trusted that the meat sold in these shops was Halal. Despite carrying Halal labels, Ahmed (2008) found that the majority of Muslim consumers were not confident in purchasing meat from

supermarkets because they do not know by whom and how the meat had been slaughtered.

Cleanliness of the store was one of the most frequently cited variables given by respondents which influenced their decision to purchase fresh food from their most preferred retail outlet. There is a great difference between the cleanliness and the condition of a modern retail outlet as compared to the traditional market. It was reported by Goldman et al. (1999), Muharam (2001), Hsu and Chang (2002), Bougoure and Lee (2009) that consumers described the condition of most traditional markets as wet, slippery, dirty and smelly. In contrast, Suryadarma et al. (2010) described supermarkets as clean and hygienic, with ample lighting, which provided superior comfort to shoppers compared to traditional markets. Consumers who placed greater importance on cleanliness may choose to purchase their fresh food from retail stores which they think are clean and comfortable to visit.

More respondents from the meat survey cited cleanliness (54.0%) as one of the variables they considered in their decision to purchase, compared to respondents from the fresh fruit and vegetable survey (23.3%). Respondents may perceive that meat products are more susceptible to contamination than fresh fruit and vegetables. This could lead to food safety issues in relation to consumers' purchase of meat from a retail store. The linkage of these quality attributes will be further discussed in the following section (Objective Five). However, regardless of the poor conditions, traditional markets still remain competitive in providing fresh meat and fresh fruit and vegetables for Malaysian consumers.

Although variety was also among the most frequently cited variables considered by respondents in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from their preferred retail outlet, the variable was discussed in quite different ways according to the place of purchase. For shoppers who preferred to visit supermarkets and hypermarkets, the concept of variety covered not only the availability of many types of fresh food in store, but also the opportunity for shoppers to purchase other groceries, household and personal items in-store (Dholakia 1999; Reardon et al. 2003). In contrast, the concept of variety experienced by shoppers when visiting the traditional markets was primarily about

the greater range of fresh food, which included not only fresh meat and fresh produce, but also fish and seafood products (Goldman et al. 1999; Zinkhan et al. 1999). Consumers in Malaysia are able to experience a diversity of fresh food and non-food products when visiting the traditional markets, given that the farmers' market and night markets are now offering a greater variety of fresh food, frozen food, ready-to-eat food, and other non-food products (such as clothing, gardening items, toys and books).

Given that the characteristics of both fresh/chilled meat and fresh fruit and vegetables are vastly different, this study finds that shoppers emphasised very different criteria in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store (Table 12.5).

Table 12.5: Factors influencing respondents' criteria of preferred retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Quality	Perceived risk
Perceived risk and Convenience	Convenience and value
Price	Attributes of modern retail outlets
Characteristics of a modern retail outlet	

Quality was ranked as the most important consideration in the respondents' decision to purchase fresh/chilled meat from a retail outlet. Similar to the literature, quality was signified by attributes such as freshness (Wandel and Bugge 1997; Becker et al. 2000; Glitch 2000; Grunert et al. 2004; Jabbar and Admassu 2009) and cleanliness (Jabbar and Admassu 2009). These researchers also described quality by the use of other attributes such as colour, origin, taste and tenderness. In contrast, these attributes were not revealed in this study. Although Halal was considered to be an important criteria in influencing respondents in their decision to purchase fresh/chilled meat, the study found that the concept of Halal was not grouped under quality.

The findings suggest that consumers prefer shopping at retail stores that provide high quality fresh meat in a clean environment. However, which retail store offers the best quality fresh/chilled meat is based on the individual's perceptions and judgements of the product. Cleanliness of the premise or the equipment used to cut

the meat is something that can be clearly observed in person. Lui (2008) suggests that traditional markets and supermarkets provide a polarised physical experience to consumers such as “dirty” opposed to “clean”, or an “unpleasant” versus a “comfortable” environment. If the quality of fresh/chilled meat is determined solely on the cleanliness of the retail store, supermarkets and hypermarkets will have the advantage over traditional markets.

Perceived risks also emerged as an important variable in the respondents’ choice of a retail store from which to purchase fresh fruit and vegetables. A total of seven criteria emerged, which included: (1) a wide range of fresh produce, (2) a wide range of other fresh produce, (3) the product was easily accessible, (4) the product was clearly priced, (5) the product was clearly labelled, (6) good quality produce and (7) the ability to self-select the produce that the consumer wanted to buy. Respondents placed a great deal of importance on the information contained on the label when purchasing fresh produce from a retail store. These findings concur with Beharrell and MacFie (1991), Caswell (2000), Batt (2009) and Fernqvist and Ekelund (2009). In Malaysia, given that much of the fresh produce is imported from various countries including China, India, Australia, Indonesia and the USA (Rahim 2007), it is not unreasonable for respondents to want to obtain more information about the product they intend to purchase in order to minimise perceived risks.

Assuming that fresh fruit and vegetables are clearly labelled in both modern retail stores and traditional markets, the perceived risk in terms of the safety of the produce may well be guaranteed, given that the origin and production method are known by the consumers. At this point in time, the probability of consumers purchasing their fresh produce from either type of retail outlet is similar because most items are generic (unbranded) and are not labelled. For instance, most consumers are unable to differentiate the quality of fresh fruit and vegetables from countries like Australia and New Zealand, with fresh produce imported from China without the presence of a label. Given that most fruit and vegetables are unbranded, this important search attribute is often absent (Bech-Larsen 2000). Therefore, the risks associated with generic food items are perceived to be common for both retail outlets. Brooker (1984) found that performance risk was that most often associated with the purchase of generic food products. This was expected, given that it is

difficult for consumers to predict the performance of a product without the presence of a quality cue such as brand name. Bech-Larsen (2000) added that since most fresh fruit and vegetables are unbranded and unpacked, the absence of packaging may cause the products to perish more easily which further increased the risk of poor product performance. Brooker (1984) then demonstrated that the risk of product failure would naturally lead to a financial risk. When consumers pay for a product, they presume that the product will deliver according to their expectations. Conversely, when a product fails to deliver, it will result in a financial loss for the consumer. Beside performance and financial risk, Bech-Larsen (2000) associated the concern for food safety with most unbranded fruit and vegetables, for without the product information obtained from labels, it was more difficult for the consumer to assess attributes such as food safety and production methods.

Given that fresh/chilled meat is considered to be a high involvement food product, Verbeke and Vackier (2004) mentioned that there is a need for consumers to obtain adequate information regarding the product in order to evaluate the product attributes prior to purchase. The results of this study concur with the literature, which revealed that perceived risk was the second most important criteria respondents considered in their decision to purchase fresh/chilled meat from their preferred retail store. Despite the presence of a label, most of the variables which described perceived risk for the purchase of fresh/chilled meat were different from those used to evaluate the purchase of fresh fruit and vegetables from a retail store. A fast checkout, local produce, origin, trading hours and loyalty were included for fresh meat, while two variables (product easily accessible and clearly labelled) were common to both products.

The accessibility of the meat was different between retail outlets. Hsu and Chang (2002) mentioned that fresh meat is displayed on counters or hung on hooks in most traditional markets in Taiwan. This situation is similar in Malaysia, for it gives consumers easy access to examine the meat prior to purchase. Hsu and Chang (2002) also mentioned that fresh meat available from modern retail outlets is pre-cut and pre-packaged and displayed on temperature controlled shelves. Some consumers preferred fresh/chilled meat to be displayed this way because it was nicely packed, clean and convenient to choose.

In order to reduce the risk in terms of the safety of meat products, Becker et al. (2000), Bernues et al. (2003) and McEachern and Seaman (2005) mentioned the importance of labelling. Concurrently, there are arguments which indicate that the labelling of meat products through traceability systems and quality assurance schemes limit consumers' trust. Gellynck et al. (2006) demonstrated that not all information contained on the labels were utilised by consumers in their decision to purchase fresh meat. The most important and most widely used information was the expiry date, meat type, weight and price, whereas the less important information included the slaughter date, nutritional value, origin and brand. Rimal (2005) mentioned that consumers' attitudes toward meat labels was influenced by socio-economic differences, where for example, consumers with a higher level of education were more likely to read labels and utilise the information in their purchasing decision.

Origin of the meat was also considered to reduce the perceived risk and thus influence where respondents were most likely to purchase their fresh meat. Given that the production of meat in Malaysia, particularly beef, is not sufficient to meet the local demand (Mohamed 2007), beef is imported from countries such as India, Pakistan, Australia and New Zealand, as well as several South American countries such as Brazil, Uruguay and Argentina (Meat Trade News Daily 2009). Therefore, it is no surprise to learn that respondents placed considerable importance on the origin of the meat in order to lessen the perceived risks involved in their purchase. From which country the meat was imported may also indicate the Halal status of the meat.

In making the decision to purchase fresh/chilled meat and fresh fruit and vegetables from any retail outlet, the concept of convenience was the second most important factor considered by respondents. However, the concept of convenience was found to differ appreciably between the different retail stores. Convenience was explained by variables such as easy parking (Hsu and Chang 2002; McKinna et al. 2007), near my house or place of work (Goldman and Hino 2005; McEachern and Seaman 2005; McKinna et al. 2007) and everything under one roof (Farhangmehr et al. 2001; Bonne and Verbeke 2006). Hsu and Chang (2002) mentioned that supermarkets often provide a large parking area where shoppers find it easy to park

their vehicle. Conversely, respondents from the focus groups mentioned that it was difficult to find parking when shopping at traditional markets. Goldman and Hino (2005) found that the distance and travelling time to shop influenced consumers choice of retail outlet. Farhangmher et al. (2001) revealed that consumers who like the convenience of buying everything in the same place prefer supermarkets or hypermarkets. Conversely, Bonne and Verbeke (2006) suggested that consumers who purchased their fresh meat from traditional stores may also purchase other products from modern retail outlets. Convenience is important for shoppers to ease their shopping experience in terms of reducing effort and time when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. Shoppers are looking for convenience due to factors such as the changing role of women (from a homemaker to having a career), which increases their participation in the workforce (Boyle 2002; Reimers and Clulow 2004; Buckley et al. 2005; Scholderer and Grunert 2005).

Price and value was also ranked among the most important factors considered by respondents in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. It was difficult to make a direct comparison on which retail outlet offered the best price for fresh/chilled meat and/or fresh fruit and vegetables given that: (1) prices for both types of fresh food was not recorded in this study and (2) the prices of the food involved in both surveys differed from one another. The only similarity found was the capacity for shoppers to bargain on the price for fresh/chilled meat and fresh fruit and vegetables when purchasing from a traditional retail outlet. This factor was an advantage for traditional retailers, given that bargaining, which was identified as a cultural practice similar to shoppers in Brazil (Zinkhan et al. 1999) and Vietnam (Maruyama and Trung 2007), was important for many consumers in Malaysia. In contrast, although prices for most products offered in modern retail outlets are fixed, the price of fresh/chilled meat and fresh fruit and vegetables are often perceived to be more competitive, particularly during promotions. Consumers who are sensitive towards changes in price will shift to that retail outlet where they can gain better value for money in purchasing their fresh food.

Five similar criteria (air-conditioned, advertising on radio/tv/newspaper, catering for kids, credit facilities and shopping points/loyalty programs) were grouped together by respondents from the fresh/chilled meat survey and the fresh fruit and vegetable survey to describe the characteristics of a modern retail outlet. Modern retail outlets provide their shoppers with a good shopping environment (Trappey and Lai 1997) and are able to cater better in fulfilling the needs of many consumers (Goldman and Hino 2005). Accepting credit card payments (Sinha and Banerjee 2004), offering shopping points to loyal customers (Sharp and Sharp 1997; Uncles et al. 2003) and advertising products through printed and electronic media (Lui 2008) were also characteristics of supermarkets and hypermarkets as discussed in the literature. The differences between both surveys were identified when respondents from the fresh/chilled meat survey included the presence of trolleys and shopping baskets and respondents from the fresh produce survey included the return/refund policy in describing the characteristics of supermarkets and hypermarkets. Pettigrew et al. (2005) found that trolleys and baskets were important shopping aids particularly for female and elderly shoppers when they do their grocery shopping from a supermarket. In order to attract more elderly shoppers to shop at supermarkets, these outlets should become more “senior-friendly”, where investments need to be made for trolleys that are highly manoeuvrable and do not require elderly shoppers to bend too far to store and retrieve items. Pettigrew et al. (2005) added that many supermarkets now provide shoppers with smaller trolleys, trolleys with a shallow tray at waist height and baskets with wheels. This provides an advantage for most modern retailers.

Providing shoppers with refunds or an exchange for defective products was another criteria which was found to differentiate the experience of shopping from a modern retail outlet as opposed to the traditional market. Kim (2008) found that supermarkets such as E-Mart provide a 100% refund or exchange policy for their customers even without any receipt or proof of purchase. Although this variable described another formal practice of large supermarket and hypermarket chains, product returns and refunds do take place in most traditional markets. However, the findings from the focus group discussions revealed that some participants reported that returning a product was much easier to do in traditional markets than supermarkets, given that the vendors recognise and trust their regular customers.

This was supported by the findings of Huong (n.d.) which indicated that some Vietnamese consumers have strong preferences for traditional markets because the return and refund policies do not involve a long waiting process and the complaint is done directly with the vendor.

In segmenting respondents according to the type of fresh food purchased and their preferred retail store, cluster analysis identified two clusters (modern retail shoppers and traditional market shoppers) for the fresh/chilled meat survey, and three clusters (modern retail shoppers, transient shoppers and traditional market shoppers) for the fresh fruit and vegetables survey (Table 12.6).

Table 12.6: Cluster of respondents by the place of purchase

Fresh/chilled meat		**Fresh fruit and vegetables**		
Modern retail shoppers	Traditional market shoppers	Modern retail shoppers	Transient shoppers	Traditional market shoppers

In the purchase of fresh/chilled meat, store choice behaviour was mainly associated with variables such as freshness (Zikhan et al. 1999; Hsu and Chang 2002; Goldman and Hino 2005), religion and ethnicity (Goldman and Hino 2005; Bonne and Verbeke 2006), a close relationship with vendors (Zikhan et al. 1999; Goldman and Hino 2005) and price (Farhangmehr et al. 2000; Hsu and Chang 2002). Ziehl et al. (2005) segmented the respondents who purchased beef according to their price sensitivity, the importance of production attributes (open-range grazing, no hormone use) and demographics (residing in urban/rural areas, occupation, gender, family size). In this study, respondents were grouped according to their store choice preference.

While consumers preferred to either purchase their fresh/chilled meat from a modern retail outlet or a traditional market, for the purchase of fresh fruit and vegetables, there were a group of consumers who were not loyal to any retail outlet.

Kovacic et al. (2002) identified four clusters where consumers were segmented according to their buying characteristics and their preferred place for purchasing fresh fruit and vegetables. While Kovacic et al. (2002) identified a large segment of

consumers described as “city markets fans”, because city markets were considered the place to meet friends and acquaintances, the findings of this research found that “traditional market shoppers” preferred to purchase their fresh produce from traditional markets because of the opportunity to bargain on price, loyalty to knowledgeable vendors and products that were perceived to be of higher quality. “Practical buyers” preferred more modern retail outlets because of the attractive presentation, product appearance and price (Kovacic et al. 2002). In this study, “modern retail shoppers” preferred to purchase from supermarkets because of the wide variety of fresh food available, the products were clearly priced, longer trading hours and a comfortable environment to shop with children.

12.3.3 The relationship between quality and store choice

Objective 3:
To identify any significant difference in the quality of the fresh/chilled meat and fresh fruit and vegetables by the place of purchase (modern retail outlet or traditional market).

In identifying any differences in the quality of the fresh food products sold from either a modern retail outlet or a traditional market, the findings revealed that most respondents from the fresh/chilled meat survey (87.1%) and fresh fruit and vegetable survey (81.9%) agreed that there were differences in quality (Table 12.7).

Table 12.7: The difference in the quality of fresh food between modern retail outlets and traditional markets

		Fresh/chilled meat		Fresh fruit and vegetable	
		N	**%**	**N**	**%**
Do you perceive any differences in the quality of [fresh/chilled meat/fresh fruit and vegetables] between modern retail outlets and traditional markets?	Yes	222	87.1	231	81.9
	No	33	12.9	51	18.1
Total		259	100.0	282	100.0
Which of the two retail outlets offer the best quality of [fresh/chilled meat/fresh fruit and vegetables]?	Modern retail outlets	98	37.8	160	56.7
	Traditional markets	161	62.2	122	43.3
Total		259	100.0	282	100.0

However, when indicating which retail outlet offered the best quality, differences were found between the two surveys. While 62.2% of respondents chose the traditional markets as the preferred retail outlet from which to purchase the best quality fresh/chilled meat, only 43.3% of the respondents from the fresh fruit and vegetable study believed that the traditional market offered the best quality produce.

Freshness and cleanliness were the two variables considered by respondents which best differentiated the quality of the fresh food offered by the alternative retail outlets (Table 12.8).

Table 12.8: Variables respondents consider that the quality of fresh food is better from another retail outlet

Fresh/chilled meat	Fresh fruit and vegetables
Freshness (97.9%%)	Freshness (78.5%)
Cleanliness (38.7%)	Price (25.2%)
Halal (29.4%)	Cleanliness (21.9%)
Price (21.4)	Display area (17.8%)

The concept of Halal was also among the most frequently cited variables respondents considered in differentiating between the quality of the fresh/chilled meat offered from alternative retail outlets. However, Halal was seldom cited by respondents when they thought about the quality of the fresh fruit and vegetables offered by either a modern retail outlet or traditional market.

In choosing between retail outlets, four variables were common in determining where respondents preferred to shop for their fresh/chilled meat and fresh produce (Table 12.9).

Table 12.9: Respondents level of agreement/disagreement with each of these statements

Fresh/chilled meat	Fresh fruit and vegetables
Products in supermarkets are clearly priced. Its more convenient to shop in supermarkets because I can buy all my groceries at the same time. Chicken and beef are fresher in traditional markets. Consumers can bargain on price in wet markets. Retailers in the traditional market are more knowledgeable about the products they sell. I prefer to buy my fresh meat from the same vendor in the traditional markets. Fresh meat is displayed better in supermarkets. The children feel comfortable when I shop at supermarkets.	Its more convenient to shop in supermarkets because I can buy all my groceries at the same time. Products in the supermarkets are clearly priced. Consumers can bargain on price in wet markets. Fresh produce is displayed better in supermarkets. Supermarkets operate on everyday while traditional markets operate only on certain days of the week.

Three of the common variables were more supportive of modern retail outlets (it's more convenient to shop in supermarkets to buy all my groceries at the same time, products in supermarkets were clearly priced, and fresh food is better displayed in supermarkets). The concept of offering convenience for supermarket patrons were also discussed by Farhangmehr et al. (2001), Shamsudin and Selamat (2005), Abu and Roslin (2008) and Ahmed (2008). The findings of this research correspond with the literature where shoppers who purchase their fresh/chilled meat and fresh fruit and vegetables from a modern retail outlet agreed that the products available from supermarkets and hypermarkets were clearly priced (Hoffmann 2000) and displayed better (Liu et al. 2006; Bougoure and Lee 2009).

The opportunity to bargain on price was the only common variable found to support the traditional retail outlets by respondents from both surveys. Maruyama and Trung (2007), Lui (2008) and Huong (n.d.) found that shoppers who preferred to shop at traditional markets enjoyed the ability to bargain on price. However, dissimilarity occurred between both surveys where respondents in the fresh/chilled meat survey demonstrated how traditional markets were superior than modern retail stores in offering fresh/chilled meat to their customers: meat was perceived to be fresher, and the shopper could buy from trusted and more knowledgeable vendors.

12.3.4 Synthesising the findings of fresh/chilled meat and fresh fruit and vegetables

The findings discussed in this section address Objectives Four, Five, Six and Seven.

Objective 4:
4a. To gain an understanding of the quality cues that consumers look for in purchasing fresh/chilled meat and fresh fruit and vegetables.
4b. To identify the implicit, intrinsic, extrinsic and credence quality cues in the consumers' decision to purchase fresh/chilled meat and fresh fruit and vegetables.

The fourth objective in this research study was to identify the quality cues utilised by consumers in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail outlet (Table 12.10).

Table 12.10: Variables respondents consider in their decision to purchase fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	Fresh fruit and vegetables
Freshness	Freshness
Halal	Cleanliness
Cleanliness	Price
Price	Country-of-origin

Freshness was found to be the most frequently cited variable considered by respondents when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. For fresh/chilled meat, freshness was described by the product appearance such as colour of the meat (McCarthy and O'Reilley 1999; Kennedy et al. 2004) or skin colour (Beharrell and MacFie 1991; Ragaert et al. 2004). For fresh fruit and vegetables, the texture (Batt 2004), size (Berdegue et al. 2003; Batt 2004) and shape (Novotorova and Mazzocco 2008; Batt 2009) were used as surrogate variables to describe freshness. The findings revealed that consumers utilised these intrinsic quality cues as search attributes in their decision to purchase. According to Brunso et al. (2002), although consumers with less experience may rely on intrinsic cues, Bech et al. (2000) and Ragaert et al. (2004) demonstrate that intrinsic cues are important indicators of food quality once consumers have experienced the product.

The next most frequently cited attribute by respondents differed between the two types of product: Halal for the purchase of fresh/chilled meat and cleanliness for the purchase of fresh produce. According to the Department of Standards Malaysia Halal (2004) and Bonne and Verbeke (2006), the concept of Halal does not only cover the method of slaughtering the animal, but includes respect for the animal, as well as the preparation, processing, packaging, storing and transportation, all of which highlight the importance of food safety. Given that a consumer cannot generally determine the Halal status of meat at the time of purchase, Halal is described as a credence quality attribute (Bonne and Verbeke 2008a). In determining the Halal status of the meat, it is expected that consumers will utilise other quality cues such as the label/Halal certificate where one is present (extrinsic cues) or trust in their preferred butcher in the traditional market.

Cleanliness was related to the physical appearance of the product and was considered particularly important in the decision to purchase fresh potatoes and spinach. Cleanliness of the produce indicated that consumers preferred to purchase product that was washed (Batt 2009) and free from soil (Fernqvist and Ekelund 2009).

Although cleanliness was the third most frequently cited variable considered by respondents in the fresh/chilled meat survey, the meaning of cleanliness was different to that discussed in the purchasing of fresh fruit and vegetables. For fresh meat, cleanliness was related to the clean environment and hygiene offered by retailers. Most supermarkets and hypermarkets display the fresh/chilled meat they offer for sale in clean refrigerated storage units. Furthermore, the clean atmosphere offered by most modern retail outlets enhanced consumers' level of confidence in terms of the safety of the meat. Conversely, many respondents were concerned about the lack of cleanliness in most traditional markets which were described as dirty, smelly and crowded, concurring with the previous findings of Goldman et al. (1999) and Hsu and Chang (2002). Without proper handling, such as unclean hands and unwashed equipment, fresh meat products may be easily contaminated and thus present a significant health risk to buyers. Although the majority of respondents (94.0%) agreed that supermarkets were cleaner than the traditional markets, Ahmed (2008) revealed that only 4.0% of respondents purchased their fresh meat from

supermarkets. Other factors such as Halal was found to be more influential than cleanliness in the respondents' decision to purchase fresh/chilled meat from a retail store.

Price was the third most frequently cited variable respondents considered in their decision to purchase fresh fruit and vegetables. As for the purchase of fresh/chilled meat, price was the fourth most frequently cited variable. In previous discussions, it has been suggested that the purchase of fresh/chilled meat requires a higher level of involvement, compared to the purchase of fresh fruit and vegetables. Given that fresh meat is relatively more expensive than fresh fruit and vegetables, consumers are giving more attention to characteristics other than price in their decision to purchase. Yeung and Morris (2001) demonstrated how consumers viewed a higher price as indicative of a premium quality product and lower prices/special offers as lower quality meat. However, West et al. (2001), who summarised the findings of Beharrell and Denison (1991), Hui et al. (1995) and Piedra et al. (1995), suggested that price was a weak factor in the decision to purchase meat compared to other factors such as freshness and appearance.

Consumer substitution among meat products occurs when consumers show their concerns about the prices of meat in the market. Jung and Koo (2000) found a substitute relationship between fish and meat products, which indicate that fish consumption in Korea would increase when the price of meat products increased. Brester et al. (2004) found that the demand for poultry meat increases as consumers substitute away from relatively more expensive beef products. In Malaysia, when the price of high quality beef was found to be too costly, Tey et al. (2008a) revealed that consumers tend to substitute other meat products or seek lower quality beef as a substitute.

As a result of high imports of fresh produce from countries such as China, India, Indonesia and Australia (Rahim 2007), country-of-origin was the fourth most frequently cited variable by respondents in their decision to purchase fresh fruit and vegetables from a retail store. The cultivation of fresh produce from China is often associated with the excessive usage of chemicals, which may give rise to food safety concerns by consumers. For instance, Greenpeace reported that from a

sample of 45 of the most commonly eaten fresh fruit and vegetables, 40 contained pesticides deemed by the World Health Organisation as being extremely toxic (Greenpeace finds pesticide residues in Chinese fruit and veg 2009). As a result, consumers may prefer not to purchase fruit and vegetables imported from China.

Respondents were then presented with several criteria which were thought to be most influential in the consumers' decision to purchase fresh/chilled meat and/or fresh fruit and vegetables from a retail store. Four themes were identified to be of equal importance to respondents in their decision to purchase fresh/chilled meat (Table 12.11).

Table 12.11: Importance of variables influencing respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	Fresh fruit and vegetables
Halal	The physical appearance of the crop
The physical appearance of the meat	The safety of the crop
Extrinsic indicators	Value for money
The safety of the meat	

Conversely, only three themes were found to influence the purchase of fresh fruit and vegetables. The main difference between the two fresh food groups was the importance respondents attached to Halal in making their decision to purchase fresh/chilled meat compared to the purchase of fresh produce.

Two variables were found to be similar in describing the physical appearance of both fresh food products: freshness and colour. These findings concur with the literature where Bonne and Verbeke (2006), Krystallis and Arvanitoyannis (2006) and Liu et al. (2006) identified the importance of freshness and colour in purchasing fresh/chilled meat, Batt (2004), McKinna et al. (2007) and Yiridoe et al. (2005) identified freshness and colour as important criteria in the consumers' decision to purchase fresh fruit and vegetables. Other variables which collectively explain the physical appearance of the product were found to be different according to each food category: smell/odour and clean/no flies applied to the purchase of fresh/chilled meat, while firmness and freedom from pests and diseases applied to the purchase of fresh fruit and vegetables. Additional variables were also found to

describe the physical appearance for each type of horticultural product: freedom from sprouting and tuber size for potatoes; freedom from wilting, good leaves and freedom from blemishes and bruises for spinach, and freedom from blemishes and bruises and size/shape for apples.

The importance of food safety was similar for both types of food products where respondents emphasised the absence of chemicals in animal production (freedom from growth promotants) and crop cultivation (freedom from chemical residues). Batt et al. (2006) indicated that if food was to be considered safe, it was necessary to reduce chemical contamination. Zulkifly et al. (2008) confirmed that food safety was being given much greater attention by consumers in Malaysia. Hadi et al. (2010) found that food safety attributes, which involved less usage of insecticides and pesticides in the production of vegetables, was preferred by Malaysian consumers.

The next theme which was of equal importance to the previous themes was comprised of a number of extrinsic cues, where a quality assurance label, competitive price and value for money were considered important in the decision to purchase fresh/chilled meat and value for money in purchasing fresh fruit and vegetables. A quality assurance label was important in the purchase of fresh/chilled meat as it provided a considerable amount of information (health, nutrition and safety) (Sepulveda et al. 2008). Bonne and Verbeke (2006) consider a quality assurance label to be an excellent extrinsic indicator of food quality attributes such as food safety, Halal, health and nutrition. In the absence of any label, the evaluation of these credence attributes is usually based on trust. Given that the behaviour of consumers is changing, with more shoppers starting to purchase fresh/chilled meat from supermarkets, quality signals such as labels and brand names will begin to play a role for consumers in this segment of the market (Bonne and Verbeke 2006; Krystallis and Arvanitoyannis 2006). However, Sepulveda et al. (2008) demonstrated that quality-labelled meat was generally more expensive than non-labelled meat because quality-labelled meat had undergone more controls, which by necessity incurs higher costs.

The findings of this study revealed differences in the factors influencing the respondents' decision to purchase fresh potatoes, spinach and apples (Table 12.12). However, the four factors influencing the respondents' decision to purchase fresh/chilled meat were similar for the purchase of fresh/chilled chicken and fresh/chilled beef.

The most important factors in the respondents' decision to purchase fresh/chilled meat was a Halal label and certification to guarantee the Halal status of the fresh/chilled meat they purchased and the physical appearance of the meat.

The physical attributes of the meat (smell, cleanliness and flesh colour) were found to be equally important to the concept of Halal in the respondents' decision to purchase fresh/chilled beef and chicken from a retail store. Similar studies have described the importance of such intrinsic attributes as fat content and colour (Resurreccion 2003); cut, colour, marbling, fat content and fat rim (de Carlos et al. 2005); and freshness, leanness and bright colour (Krystallis and Arvanitoyannis 2006).

Table 12.12: Factors influencing respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	**Fresh fruit and vegetables**		
	Potatoes	**Spinach**	**Apples**
Halal and the physical appearance of the meat	The physical appearance of the crop, value and usage	Quality	Integrity
Price and value	Prior experience	Safe	Value and the physical appearance of the crop
Poultry/cattle production	Promotion	Convenience	Origin
			Promotion

Similar to the purchase of fresh/chilled meat, the most important factor which influenced respondents' decision to purchase fresh potatoes and spinach revolved around the physical attributes of the two crops. However, different variables were found to describe the physical appearance of potatoes (tuber shape, freedom from sprouting, size and flesh colour) and spinach (freshness, free from wilting and good

leaves). In the case of fresh potatoes, the findings of this study concur with Jemison et al. (2008), where consumers in the USA emphasised the physical characteristics of the potatoes (skin colour and size). The findings of this study were also compared with Batt (2009), where Australian consumers highlighted the importance of freedom from pests and diseases, no sprouts, freshness and firmness in their decision to purchase fresh potatoes from a retail store. As the price of potatoes (RM3.00/kg to RM4.00/kg – depending on the origin of the potatoes) in the market is more expensive than spinach (RM2.00 to RM2.50 per bunch) and apples (RM0.50 to RM1.00 – depending on size) (*Laporan harga purata peringkat komoditi harian pada Khamis, 3 Jun* 2010), respondents were found to rank value and the usage of potatoes as the most important factor in their decision to purchase.

In the case of spinach, the findings of this study concur with Slosser (2006), who suggested that the quality and visual appearance of spinach was important when making the decision to purchase fresh spinach. However, in purchasing apples, given that the majority of apples in Malaysia are imported from China and chemicals are extensively used in their production (Zeitner 2006), this may have led respondents to consider integrity (freedom from chemicals and freedom from pests and diseases) as the most important factor which influenced their decision to purchase fresh apples from a retail store.

Price and value were considered to be the second most important factor influencing the respondents' decision to purchase fresh/chilled meat. In the Klang Valley region, the price of chicken is much cheaper (RM7.00 to RM7.50 per kg) compared to the price of beef (RM20.00 per kg) (*Laporan harga purata peringkat komoditi harian pada Khamis, 3 Jun* 2010). As a result of this, consumers may purchase and consume more chicken compared to beef. The price of both types of fresh/chilled meat is highly variable and changes according to the festive seasons. Given that the price of beef is considerably more expensive, the consumption of beef in Malaysia is limited to festive or special occasions. Verbeke and Viaene (1999) confirmed that consumers in Belgium also perceive beef as the meat for special occasions. Similarly, McIlveen and Buchanan (2001) found that respondents purchased beef for special occasions. However, in purchasing meat for a special occasion, they were more likely to purchase from a butcher rather than a supermarket. Kasa (2003)

also mentioned that beef consumption in countries in North East Asia is traditionally associated with special occasions. In Korea for instance, the consumption of *Hanwoo* beef is related to a special religious festive. For the Muslim community, the consumption of beef is popular during the celebration of Eid-al-Fitr (Gipson 1999). Given that the consumption of these two fresh meat products are high, particularly chicken meat (Malaysia Poultry and Products Annual 2006), this may explain why price and value are considered so important in the respondents' decision to purchase fresh/chilled meat.

The second most important factor considered by respondents as influencing their decision to purchase fresh fruit and vegetables was different from fresh/chilled meat and different for each crop. For potatoes, respondents ranked the importance of prior experience as the second most important factor which influenced their purchase. The findings of this study revealed that respondents used variables such as the origin of potatoes (country-of-origin and locally grown), organic, favourable prior purchase and variety when purchasing fresh potatoes from a retail store. In a similar study, Nalley et al. (2004) demonstrated how consumers use the origin of sweet potatoes before evaluating the taste (experience attributes). Batt (2004) revealed how consumers anticipated that by purchasing potatoes with yellow skin and yellow flesh, the tubers would cook well and taste good.

In the case of spinach, respondents emphasised the importance of safety (organic, size, favourable prior purchase and locally grown) as the second most important factor to influence their purchase. Here the results indicated that respondents were more concerned about the cultivation method of spinach in their decision to purchase. On the other hand, good value (value for money and competitive price) and the physical attributes of apples (skin colour and size/shape) were ranked as the second most important factor in the respondents' decision to purchase fresh apples.

The study results demonstrate that respondents were less concerned about methods of poultry and cattle production in their decision to purchase fresh/chilled meat. While several other studies have suggested that production and ethical matters were seldom considered by consumers when purchasing fresh/chilled meat (McEachern and Schroder 2002; Idrus [cited in Azhari 2010]), given that Halal includes

guidelines on animal welfare, this may explain why animal welfare did not emerge as a single variable.

In the case of fresh produce, although a factor on how the crops were cultivated did not emerge on its own, implicitly, respondents have shown their concerns about the cultivation methods employed to produce the fresh produce they consume by considering freedom from chemical residues, organics and the origin of the crop.

Promotional items were the least important factor considered by respondents in their decision to purchase fresh potatoes and apples. These findings concur with Batt (2009), who revealed how promotional variables such as newspaper advertising/catalogues, advice from sales assistants, the availability of product information in-store and label/brand had the least impact on Australian consumers in their decision to purchase fresh potatoes from a retail store.

In-store tastings were also found to have little influence on the respondents' decision to purchase fresh apples. However, these findings conflict with Ricks et al. (2002), who suggested that 95.0% of the consumers who were involved in in-store sampling would consider purchasing apples. In-store tastings are considered to be important as: (1) it enables consumers to try new varieties of apples in the market, and (2) it collects feedback from consumers which can be later utilised by marketers to develop new promotional material. Unlike potatoes and apples, it is unusual to find spinach being promoted in either newspapers or catalogues. This may explain why promotion did not emerge as one of the factors influencing the consumers' decision to purchase fresh spinach from a retail store.

Convenience (spinach is pre-packed and tied in bunches) was found to be the least important factor influencing the consumers' decision to purchase spinach. This may be due to the fact that consumers prefer to self-select their fruit and vegetables rather than purchasing products that are already packed. Similarly, van der Pol and Ryan (1996) found that although it was more convenient to purchase pre-packed vegetables, most consumers preferred to self-select the vegetables they intended to purchase. The main reason was quality control. However, the concept of convenience in the purchase of spinach is more likely to be associated with the

practicality of handling the product. Anecdotal evidence suggests that in purchasing fresh spinach, self-selecting may not represent convenience, as the consumers would have to select each plant individually, which would result in considerably more time and effort. Furthermore, in the purchase of spinach, consumers do not have much choice given that this vegetable is already tied in bunches when sold to the retail outlets. Retailers would also like to avoid the loss from damaged vegetables caused by consumers self- selecting individual pieces. Mergenthaler et al. (2009) examined the convenience attributes of vegetables from the perspective of semi-processed products (washed, peeled and packed), which reduce the amount of time in preparing vegetables at home.

Objective 5:
5a. To understand the relationship between perceived quality cues and quality attributes.
5b. To identify the relative importance of the quality cues on the desired quality attributes.

The fifth research objective was to identify the relationship between perceived quality cues and quality attributes in the respondents' decision to purchase fresh food. In associating the variables and different sets of desired values, the findings revealed similarities between both fresh/chilled meat and fresh fruit and vegetables. Freshness and the physical appearance of the product were among the variables most frequently cited by respondents in relation to good taste and good texture (Table 12.13).

Table 12.13: Group of variables respondents relate with good taste and good texture/mouth feel

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food has a good taste.	Freshness The physical appearance of the meat	Freshness The physical appearance of the crops
The food has good texture/mouth feel.	Freshness The physical appearance of the meat	Freshness The physical appearance of the crops

Not unexpectedly, the main difference between fresh/chilled meat and fresh fruit and vegetable respondents were the physical attributes of the product. While the physical appearance of meat was described by colour, smell/odour and clean/no

flies, the physical appearance of fresh produce was determined by the firmness and colour of the product. Taste and good texture/mouth feel was associated with the smell/odour of the meat, which concurred with Egan et al. (2001) and Liu et al. (2006). However, Carpenter et al. (2001) demonstrated that consumers' preferences towards the colour of beef (red, purple, brown), while it was influential in their decision to purchase, had little effect on the eating satisfaction or the taste of the meat. According to Carpenter et al. (2001), no matter what colour the meat is (red for fresh beef, brown for discounted beef or purple for vacuum packaged beef), consumer eating satisfaction was determined by other quality attributes such as tenderness, juiciness and flavour. Respondents often make the association that a clean store and the appearance of clean meat will influence the taste and texture/mouth feel. Although consumers associate cleanliness and the absence of flies with food that has a good taste and good texture/mouth feel, it is more likely that any association is more related to food safety. Mitchell (1998) noted that a dirty store might suggest an unhygienic environment.

Fat content and leanness were additional variables cited by respondents which led them to believe that the fresh/chilled meat they purchased had a good texture and mouth feel. Bonne and Verbeke (2006) demonstrated that older respondents emphasised the importance of purchasing meat which contained less fat as it was easier to chew when consuming the product. Bonne and Verbeke (2006) also revealed how some respondents relate leanness and tenderness to more tasty meat.

For fresh fruit and vegetables, freshness, firmness and colour were variables cited by respondents which they believed were related to good taste and good texture/mouth feel. As suggested by Yiridoe et al. (2005), freshness leds to a unique taste for fruit and vegetables. For apples, Harker (2001) mentioned that the firmness of the fruit (crisp, tough and soft) related to the mouth feel properties (mealy, floury and webby), taste (sweetness, acidity and astringency) and juiciness. Harker (2001) also demonstrated how some consumers have preferences for sweet hard apples, while others prefer softer apples. Daillant-Spinnler (1996) confirmed the association between the colour of apples and sensory characteristics such as taste and flavour.

Depending on the crops, additional variables were also used to describe the physical appearance of the crops that may lead to good taste and good texture. However, cleanliness was not associated with good taste or good texture in the respondents' decision to purchase fresh fruit and vegetables.

In their attempt to ascertain that the food was safe to eat, respondents placed considerable importance on the freedom from chemical residues for both fresh/chilled meat and the fresh fruit and vegetables they purchased from a retail store (Table 12.14).

Table 12.14: Group of variables respondents relate with food safety

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food is safe to eat.	Freedom from chemicals/growth promotants Appropriately slaughtered (Halal) Freedom from antibiotics Halal certificate Clean/no flies	Freedom from chemical residues Freedom from pests and diseases

Other variables considered by respondents to determine the safety of the fresh/chilled meat purchased revolved around Halal (appropriately slaughtered and certificate), freedom from antibiotics and growth promotants and microbial safety (clean/no flies). Respondents were generally more concerned about chemical safety rather than microbial safety in determining that the meat they had purchased was safe to consume. According to Krystallis and Arvanitoyannis (2006), although microbial contaminants such as Salmonella, BSE and E/coli are much more of a health threat compared to hormones and antibiotics, most consumers recognised that the risk of microbiological contamination could be minimised, given that meat was cooked before consumption (Yeung and Morris 2006). While cooking would eliminate pathogens, chemical residues, growth promotants and hormones would remain.

With regard to the purchase of fresh produce, respondents were found to be much less concerned about microbial contamination. This may due to the fact that

consumers commonly understood that washing and peeling fruit and vegetables reduced their exposure to pesticides (Mehta 2003). However, Brackett (2004) indicated that when washing fresh produce, even if antimicrobial agents were added to the water, it would not completely eliminate pathogens from the surface of fruit and vegetables. Heaton and Jones (2008) demonstrated how consumers may be potentially exposed to a number of pathogens when consuming fresh produce such as lettuce, spinach and tomatoes. Contamination may occur at harvest, during storage and via the irrigation water. Heaton and Jones (2008) suggested the use of sanitisers (chlorine-based products) and various other chemicals to minimise the risk of contamination, but the use of chemicals in fruit and vegetable production will elevate consumers' concerns about food safety.

In purchasing fresh fruit and vegetables, the variables respondents believed would lead to safe food were found to be inconsistent. While respondents wanted less chemicals to be used in crop production, at the same time, they preferred fresh produce that was free from pests and diseases. Wilson and Tisdell (2001) demonstrated that the usage of pesticides has been very effective in reducing pest and disease infestations and postharvest spoilage. According to Baker (1999), the level of damage on fruits was an important indicator in determining the availability of fresh produce in the market. As a result of this, Baker (1999) indicated that most apples available in retail stores are free from insect damage. Consumers may perceive that damage from pests and diseases indicates that the produce is unfit for consumption. Nevertheless, consumers who are more concerned about food safety were less concerned about the level of damage on the fruit and vegetables they purchased. Baker (1999) revealed that for those consumers who were primarily concerned about the usage of chemical residues, the level of fruit damage by pests was relatively unimportant in their decision to purchase apples. Similarly, Dinham (2003) found that there were consumers who deliberately chose vegetables showing signs of pest attack because they perceived that the produce had lower pesticide residues and was safer to eat.

The concept of Halal (appropriately slaughtered and Halal certificate) were variables which ensured food safety in the purchase of fresh/chilled meat, but were not cited in the purchase of fresh fruit and vegetables. Bonne and Verbeke (2006)

and Talib et al. (2008) reported that meat which had been appropriately slaughtered according to Islamic rules could guarantee that the food was hygienic and safe to eat because it contained less blood, which reduced the risk of bacterial contamination. However, given that the method of slaughter which determines the Halal status of the product is a credence quality attribute (Bonne and Verbeke 2006), consumers require some instrument to verify that the fresh/chilled meat they are about to purchase is Halal. In order to support this requirement, respondents often associated a Halal certificate with their desire to reassure themselves that the fresh/chilled meat they were about to purchase was safe to eat.

Respondents from both surveys considered a number of credence quality attributes which directed them to believe that the fresh/chilled meat and fresh fruit and vegetables they had purchased were safe to eat. However, without the presence of an extrinsic cue such as a label or a certificate, it is difficult for consumers to verify that the food is safe to eat. For this reason, a certificate or quality label is often attached to the product to demonstrate that it meets some prescribed food safety and food quality standards (Botonaki et al. 2006). Nevertheless, Botonaki et al. (2006) suggested that the level of consumers' awareness and knowledge of certified fruit and vegetables in Greece was still relatively low because the availability of certified fresh produce was still limited and there was inadequate promotion with regards to certified produce in the market.

Similar variables such as freshness, freedom from chemicals and organic were associated with the purchase of fresh/chilled meat and fresh fruit and vegetables that were perceived to be healthy and nutritious (Table 12.15).

Table 12.15: Group of variables respondents relate with health and nutrition

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food is healthy and nutritious.	Freshness Freedom from chemicals/growth promotants Organically grown Clean/no flies Leanness and fat content	Freshness Freedom from chemical residues Organic

Kennedy et al. (2004) confirm that freshness of meat is an indicator of healthfulness. Oakes and Slotterback (2002) demonstrated that North Americans utilised the appearance of the meat (freshness and fat content) to indicate that the meat was healthy and nutritious. Bonne and Verbeke (2006) suggested that leanness of the meat was an indicator of healthy and nutritious food, given that the consumption of lean meat was perceived to reduce cholesterol and to maintain bodyweight. Killinger et al. (2004) identified two different segments of consumers: (1) those who had a preference for high marbled meat because of the superior eating quality (taste), and (2) those who had a preference for low marbled meat because they were more concerned with the fat content (health). Krystallis and Arvanitoyannis (2006) reported that female consumers who were health conscious were more oriented towards the consumption of lean meat.

Freshness of fruit and vegetables was frequently mentioned as a quality indicator, which suggested that the produce was healthy and nutritious. Shewfelt (2006) suggested that more sophisticated consumers demanded high quality fresh fruit and vegetables to support their active and healthy lifestyles.

Organic and other sustainable methods of cultivation were additional quality attributes which were believed to indicate that fresh fruit and vegetables were more healthy and nutritious than conventionally produced fruit and vegetables. Consumers' believe organically produced fruit and vegetables to: (1) have more vitamins and minerals (Roddy et al. 1996; Worthington 2001); (2) to taste better (Roddy et al. 1996; Wandel and Bugge 1997), and (3) to be more natural and more healthy (Lea and Worsley 2005; Botonaki et al. 2006; Yiridoe et al. 2005). The use of chemicals in producing apples (either through conventional pesticide use, reduced pesticide use or very limited pesticide use) has been discussed by Baker (1999), who links the risks of cancer to the consumers' health.

Similar variables which described the production process (freedom from chemicals/growth promotants and organically produced) were also indicators that the fresh/chilled meat purchased was healthy and nutritious. Harper and Makatouni (2002) demonstrated how consumers were concerned with the production method (content of feed, the use of veterinary medicines and free range method of farming)

for the meat they purchased from a retail store. Harper and Makatouni (2002) emphasised that “healthy and happy animals produce healthy products”.

Competitive price, value for money, freshness, size and intended use were associated with food that was perceived to represent good value for money (Table 12.16).

Table 12.16: Group of variables respondents relate with value for money

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food represents value for money.	Competitive price Value for money Freshness Size Intended use	Competitive price Value for money Freshness Size Intended use

Price was the most frequently cited variable associated with the purchase of both fresh/chilled meat and fresh fruit and vegetables that were believed to deliver good value for money. Comparing between the two groups of products, clearly, the per kg price for fresh fruit and vegetables is much lower than the price for fresh/chilled meat. Therefore, it is important to get value for money for the fresh/chilled meat purchased. Consumers may therefore spend more time in making their decision to purchase fresh/chilled meat from a retail store compared to fresh fruit and vegetables. As indicated by McCarthy and O’Reilly (1999), value for money is achieved through utilising quality attributes such as freshness, size and shape of the meat. For instance, Egan et al. (2001) found that consumers preferred medium to large size steaks. If the piece of steak is small, after cooking, the meat may shrink and dry which will not represent good value for money. In the Malaysian context, the type of cooking or the intended use generally determines which cuts of meat are preferred, given that not all cuts will deliver the same satisfaction. Therefore, the findings of this study reveal that the attributes respondents utilised (size and intended use) revolve around minimising risk and wastage which signified food that brought better value for money.

Batt (2004) demonstrated the relationship between fruit size, intended use and value for money for the purchase of apples. For instance, there is a demand for smaller

sized apples to be consumed by children as snacks at school. For the larger sizes, although parents may cut the fruit into smaller pieces for the children, Batt (2004) found that it did not represent good value for money because children refused to eat the discoloured fruit. As for potatoes, Pavlista (1997) demonstrated the importance of choosing the correct type of potatoes according to the intended use. According to Pavlista (1997), given that red potatoes are naturally high in glucose and have a low dry matter content, these potatoes boiled very well and were very suitable for making potato salad. Conversely, the russet varieties were preferred for making fries due to the low sugar content and medium specific gravity which gives the fries the desired mealy texture. Consumers may not gain the benefit of the purchase (value for money) if they use the wrong type of potato in their cooking.

Respondents associated a similar group of variables around the production systems (organic, freedom from chemicals/growth promotants, freedom from chemical residues) for fresh/chilled meat and fresh fruit and vegetables that had been produced in a way that protected the environment and worker welfare (Table 12.17).

Table 12.17: Group of variables respondents relate with food that has been produced in a way that is good for the environment and protects worker welfare

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food has been produced in a way that is good for the environment.	Organically grown Freedom from chemicals/growth promotants Freedom from antibiotics	Organic Freedom from chemical residues Freedom from pests and diseases
The food has been produced in a way that protects worker welfare.	Grown on local farms Raised in a humane way Freedom from chemicals/growth promotants	Freedom from chemical residues Organic Locally grown

Kumm (2002) demonstrated how livestock produced under organic production systems were more sustainable. Under organic meat production systems, animals were: (1) fed with fodder that was grown without artificial fertilisers and chemical pesticides; (2) nurtured in a more natural environment (free grazing and not kept all the time in shelters) and (3) manure from animals was managed appropriately (not

dumped into water sources that may cause other health problems) and reused to provide plant nutrients in fodder production. McEachern and Willock (2004) reported that farmers in the UK were being encouraged to convert from conventional farming to organic farming to protect the environment. Besides concerns about health, Grunert et al. (2004) suggested that consumers associate organic meat production with concern for the environment and animal welfare.

The association between organically produced product, freedom from chemical residues and concern for the environment was demonstrated by Yiridoe et al. (2005), where younger consumers preferred to purchase organic products because they were chemical-free and environmentally-friendly. The National Institute for Occupational Safety and Health [cited in Hanson et al. 2004] reported that in the US, pesticide poisoning occurred among approximately 3,380,000 agricultural workers each year. Pimentel and Greiner (1997) [cited in Wilson and Tisdell 2001] mentioned that the continuous use of pesticides in agriculture production damaged agricultural sustainability, the environment and could even cause ill-health to farmers, those living near farms and consumers of food products. Wilson and Tisdell (2001) made a comparison between farmers from developed countries and developing countries, claiming that farmers from developing countries were more exposed to direct contact with pesticides, given that they use hand sprayers compared to farmers in the developed countries who apply pesticides from a closed environment (pesticides sprayed from an aircraft or a tractor). Furthermore, with fewer regulations that require farmers in the developing countries to use the appropriate protective gear when handling pesticides, such equipment was poorly maintained, while others often did not wear the gear at all. The World Resources Institute (1998) [cited in Wilson and Tisdell 2001] reported that the lack of proper storage facilities for the chemicals, poor living conditions and water supplies contaminated with pesticides adversely affected the health of farmers and their families. Despite the negative affects arising from the use of chemicals, Hanson et al. (2004) stated that chronic illness resulting from pesticide exposure among agricultural workers was not well documented.

Respondents related origin and the means by which animals were raised as signals that were perceived to protect worker welfare. Trent et al. (2003) described the

conditions of abattoirs in some developing countries as offering poor sanitation, poor veterinary care, and inadequate safety equipment, which may expose workers to injury at work and place them in an unsafe working environment. Slaughter houses in Malaysia are supervised by the Department of Islamic Development Malaysia (JAKIM) (*Garis panduan pengeluar produk, premis makanan dan loji penyembelihan* 2007) which requires them to follow these regulations: (1) workers who are in charge of the slaughter must obtain an official licence certified from JAKIM; (2) the abattoir must hold a certificate from the Department of Veterinary Services Malaysia; (3) the abattoir must be clean and (4) the slaughter, handling, storage and transport process must adhere to the rules prescribed in MS1500:2004. According to Trent et al. (2003), the introduction of modern systems and equipment in abattoirs, together with more humane transport, handling and slaughtering practices, will not only improve animal welfare, but also improve the safety of the workers involved. According to Sarif (2009), in order for a farm in Malaysia to be accredited to the Livestock Farm Accreditation Scheme (SALT), the farm is evaluated on various aspects including: (1) the adoption of Good Animal Husbandry Practices (GAHP) to ensure the health and welfare of the animal; (2) to operate in a sustainable manner; (3) to ensure workers welfare and safety; and, (4) produce products that are safe for human consumption. Recently, Shahroni (2010) reported that a total of 14 slaughter houses had been shut down due to their failure to conform to the quality standards that had been established. Respondents who were aware of the slaughtering process and how animals were raised locally, choose to associate these variables with the well-being of the workers involved.

To ensure that the fresh/chilled meat purchased was guaranteed Halal, respondents associated Halal with variables such as an Halal certificate, appropriate slaughter and quality assurance label (Table 12.18). This group of variables was not associated with the purchase of fresh fruit and vegetables.

Table 12.18: Group of variables respondents relate with Halal

Desired outcomes	Fresh/chilled meat	Fresh fruit and vegetables
The food is guaranteed Halal.	Halal certificate Appropriately slaughtered Quality assurance label Country-of-origin Label/brand	Locally grown Label/brand Country-of-origin

A group of variables which indicated the origin and label/brand name for fresh/chilled meat and fresh fruit and vegetables was associated with the Halal status of the food. In the purchase of fresh/chilled meat, respondents were concerned about the origin of the meat as a result of Malaysian imports of fresh/chilled meat from countries such as Australia, Latin America and the US, where Islam is a minority religion (Chong 2010). Riaz and Chaudry (2004) state that since 1982, it has been mandatory for all imported meat, which includes beef, poultry, mutton and veal, to be Halal certified by JAKIM. Slaughter houses producing meat and poultry products overseas must be inspected, evaluated and approved by both JAKIM and the Department of Veterinary Services. The USDA reported that all poultry shipments imported from the US to Malaysia are accompanied by an import licence, veterinary health certificate, meat inspection certificate and Halal certificate (Malaysia Poultry and Products Annual Overview 2005). Furthermore, all poultry meat must be labelled with the registered number of the abattoir and packing plant, lot number, date of production and slaughter. According to the Meat Trade News Daily, Malaysia blocked the import of meat from New Zealand from 2005 to 2007 over claims that the animals had been electrically stunned prior to slaughter (New Zealand - Halal meat ban could cripple sheep industry 2009).

Labelling the product as Halal also conveys information that the food is safe and permitted to be eaten. However, with the presence of many Halal labels and certificates issued by private organisations, Bernama (2010) reports that consumers are often cheated by food producers or manufacturers who want to add value to the product by capturing the Muslim market without seeking formal accreditation (Ariff 2010). As a result, JAKIM has recently banned the use of all other Halal labels and certificates in the Malaysian food industry (Hussain 2010).

A Halal label or certificate is not necessary for fresh produce given that the product is naturally Halal. However, similar to the purchase of fresh/chilled meat, respondents have associated variables such as origin and labels to guarantees that the fresh fruit and vegetables purchased are Halal. New Zealand Trade and Enterprise report that Malaysia is still dependant on imported fruit and vegetables (Malaysia still dependant on imported fruit, vegetables 2010). Warr et al. (2008) mentioned that Malaysia imported fruit and vegetables from countries such as China, India, Thailand, Indonesia, Australia and New Zealand. According to the Malaysian Agriculture and Agro-based Industry Minister, imported fresh fruit and vegetables must conform to grading, packaging and labelling guidelines, and meet the required standard of the Federal Agriculture Marketing Authority (FAMA) and the Malaysian Agriculture Quarantine Inspection Services (Malaysia to enforce grading system for fruit/vegetables 2008). The Minister for the Malaysian Agriculture and Agro-based Industry mentioned that Malaysia often encounters problems associated with the quality and safety of imported fresh produce from Thailand and Indonesia, but not with produce imported from developed countries such as Australia or Europe (Malaysia to enforce grading system for fruit/vegetables 2008).

The key findings from this section reveal that a number of variables were used by respondents in both surveys to evaluate a multiple number of desired values. Freshness, for both fresh/chilled meat and fresh fruit and vegetables, indicates that the food will taste good, have a good texture/mouth feel, be healthy and nutritious and deliver value for money (Table 12.19).

Table 12.19: Variable respondents relate with a number of desired outcomes

Variables	Desired outcomes
Freshness	The food has a good taste. The food has good texture/mouth feel. The food is healthy and nutritious. The food represents value for money.

Respondents also associated fresh food that was free from chemical residues and/or growth promotants as an indicator of food that was safe to eat, healthy and

nutritious and had been produced in a manner that was not harmful for the environment or worker welfare (Table 12.20).

Table 12.20: Variable respondents relate with a number of desired outcomes

Variables	Desired outcomes
Freedom from chemical residues/growth promotants	The food is safe to eat. The food is healthy and nutritious. The food has been produced in a way that is good for the environment. The food has been produced in a way that protects worker welfare.

Respondents have also related freshness and freedom from chemical residues/growth promotants as an indicator that the food is healthy and nutritious to eat. However, other variables were utilised in determining that the food was Halal (appropriately slaughtered and Halal certificate).

Objective 6: To identify any significant difference in the importance of the quality attributes consumers desire in purchasing fresh/chilled meat and fresh fruit and vegetables.

The sixth research objective sought to identify any significant differences in the importance attached to the quality attributes when purchasing fresh/chilled meat and fresh fruit and vegetables from a retail store. Three desired values (Halal, food safety and food that is healthy and nutritious) were similarly ranked by respondents in their decision to purchase both types of food products (Table 12.21).

Table 12.21: Importance of criteria respondents use in their decision to purchase fresh/chilled meat and fresh fruit and vegetables in a retail store

Fresh/chilled meat	Fresh fruit and vegetables
The food is guaranteed Halal. The food is safe to eat. The food is healthy and nutritious.	The food is safe to eat. The food is healthy and nutritious. The food is guaranteed Halal. The food has a good taste. The food has good texture/mouth feel.

In the respondents' decision to purchase fresh fruit and vegetables, two additional criteria which described good taste and good texture were equally important to food that was considered safe, healthy, nutritious and guaranteed Halal. The importance

of ethical issues such as concern for the environment and worker welfare were largely irrelevant in the respondents' decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. Othman (2000) reported similar findings, which demonstrated that Malaysian consumers placed more importance on quality, price and brand rather than concern for the environment in their purchasing decisions. Said et al. (2003) found that the level of environmental knowledge and awareness among Malaysian consumers was relatively high. Nevertheless, consumers' level of practice and responsibility towards caring for the environment do not align with the current level of concern for the environment. For instance, Said et al. (2003) reported that waste has been identified as one of the environmental priorities for Malaysia. Conversely, practices such as reuse and recycling were reported to be very low among consumers. Environmental awareness campaigns are still being implemented to encourage consumers to care for the environment. Hypermarkets such as Tesco show their support for the governments "No Plastic Bag Day" campaign by introducing the Green Club card initiative (Menon and Bhatt 2010). Under this program, shoppers are rewarded with extra shopping points if they bring their own shopping bags when purchasing from Tesco. Conversely, shoppers who continue to use plastic bags to pack their goods will be charged RM0.20 per bag. According to Said et al. (2003), rewarding or penalising shoppers is a viable solution to encourage them to be more responsible towards the environment.

The wellbeing of agricultural workers was also considered relatively unimportant by respondents in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store, despite the emergence of several Good Agricultural Practice (GAP) schemes: (1) Malaysian Farm Good Agricultural Practice Scheme (SALM); (2) Malaysian Aquaculture Farm Certification Scheme (SPLAM); (3) the Livestock Farm Accreditation Scheme (SALT) and (4) Malaysian Organic Scheme (SOM) (Salleh et al. 2007). According to Othman (2005) and Menon (2010), farms that adopt GAP operate in a sustainable and environmentally friendly way with appropriate concerns directed towards workers' health and safety to produce products that are of good quality and safe for consumption. The implementation of GAP ensures that the rights of farm workers are taken care of, including appropriate dress codes and the employment of those workers who are over the age of 16 years

(Salleh et al. 2007). Given that the awareness of GAP among consumers in Malaysia is still low (Menon 2010) and adopting GAP schemes in Malaysia is still on a voluntarily basis (Salleh et al. 2007), there is no pressure for farms to adopt GAP. If consumers are exposed to the benefits of GAP schemes, they may recognise that GAP ensures the safety of the food produced, care for the environment and social responsibility towards workers' health, safety and welfare.

Objective 7:
7a. To identify the extent to which consumers' expectations (quality cues and quality attributes) are fulfilled by consumption (experiential quality).
7b. To identify the extent to which consumers adjust their expectations in response to dissatisfaction.

The seventh research objective revolves around the experiential quality attributes, which involve the consumers' feelings of satisfaction or dissatisfaction over the purchase of fresh food from a retail store. Respondents were often disappointed with the Halal status of the fresh food that they purchased (Table 12.22).

Although Halal was considered as an important criteria in the decision to purchase fresh/chilled meat because of religious issues, the findings indicated that respondents also want an assurance that the fresh fruit and vegetables purchased from a retail store is also Halal. Fresh fruit and vegetables are generally Halal and permissible to eat (Chaudry et al. 1997). However, without information about how the crops were grown such as the type of animal manures (particularly if from pigs) or composts used in fruit and vegetable production, consumers may have doubts about whether the fruit and vegetables are Halal. Furthermore, the concern about the Halal status of the produce may also involve those fruits and vegetables that have been semi-processed as they may contain ingredients that are not Halal (mayonnaise) or have been processed alongside or on machines that are not Halal. The requirement to guarantee that the vegetables are Halal was mentioned by Johnson et al. (2008), who highlighted that the vegetable industry in Asia has to operate in a transparent manner to provide assurances to consumers about the product integrity, safety and how the product has been produced.

Table 12.22: Occasions where respondents felt unhappy with the quality of fresh/chilled meat and fresh fruit and vegetables purchased with regard to the following desired outcomes

Fresh/chilled meat	Fresh fruit and vegetables		
	Potatoes	Spinach	Apples
The food is not guaranteed Halal. The food is unsafe to eat. The food is unhealthy and not nutritious. The food does not represent value for money. The food has a poor texture/mouth feel. The food has a bad taste. The food has not been produced in a way that protects worker welfare. The food has not been produced in a way that is good for the environment.	The food is not guaranteed Halal. The food is unsafe to eat. The food is unhealthy and not nutritious. The food does not represent value for money. The food has a poor texture/mouth feel. The food has a bad taste. The food has not been produced in a way that is good for the environment. The food has not been produced in a way that protects worker welfare.	The food is not guaranteed Halal. The food is unhealthy and not nutritious. The food is unsafe to eat. The food does not represent value for money. The food has a poor texture/mouth feel. The food has a bad taste. The food has not been produced in a way that is good for the environment. The food has not been produced in a way that protects worker welfare.	The food is not guaranteed Halal. The food is unsafe to eat. The food is unhealthy and not nutritious. The food does not represent value for money. The food has a bad taste. The food has a poor texture/mouth feel. The food has not been produced in a way that is good for the environment. The food has not been produced in a way that protects worker welfare.

Beside Halal, respondents were often dissatisfied with the level of food safety associated with their purchase of fresh/chilled meat, potatoes and apples. The findings correspond with earlier results which demonstrated that food safety was ranked among the most important criteria respondents considered in their decision to purchase fresh/chilled meat and fresh fruit and vegetables. Food safety has always been a concern for consumers when purchasing fresh/chilled meat (McEachern and Schroder 2002; Grunert 2005; Liu et al. 2006) and fresh fruit and vegetables (Baker 1999; Berdegue et al. 2005; Hadi et al. 2010).

The results were found to be consistent with the dissatisfaction respondents experienced after purchasing both types of fresh/chilled meat (beef and chicken). However, respondents' dissatisfaction experiences for potatoes, spinach and apples differed because of the different factors that influenced the respondents' decision to purchase each crop.

The results were found to be bipolar, where some respondents only very occasionally had an unsatisfactory experience versus those respondents who were always dissatisfied with the fresh food they purchased. According to Tyagi and Kumar (2004, p. 65), a consumer's satisfaction over a product is a function of the closeness between the consumers' product expectations and the product's perceived performance. Batt (2004) and Tyagi and Kumar (2004) suggest that a consumer will be highly satisfied when the product's performance exceeds the consumers' product expectations and dissatisfied when the product's performance falls short of the consumers' product expectations. The satisfaction or dissatisfaction level of the purchase may be determined by the variables respondents considered in making their decision to purchase and the place of purchase.

Unfresh product was the main reason respondents gave for feeling dissatisfied with the quality of the fresh/chilled meat and fresh fruit and vegetables purchased from a retail store (Table 12.23).

Table 12.23: Reasons for dissatisfaction with the quality of fresh/chilled meat and fresh fruit and vegetables

Fresh/chilled meat	Fresh fruit and vegetables
Not fresh	Not fresh
Price	Taste
Cleanliness	Price
Taste	
Not Halal guaranteed	

The lack of freshness was most often described by the physical appearance of the product or the intrinsic quality cues. Those respondents who were unhappy in the fresh/chilled meat survey were most dissatisfied with the texture and colour of the meat; while rotten, sprouting, wilted and too many bruises were the major defects described by dissatisfied respondents who purchased fresh fruit and vegetables. Szybillio and Jacoby (1974) [cited in Bredahl (2004)] mentioned that intrinsic quality cues were generally stronger determinants of perceived quality than extrinsic quality cues. Therefore, consumers did not want to purchase a product which was visually defective to avoid early disappointment.

Price was mentioned by respondents as another reason for dissatisfaction with the fresh/chilled meat and fresh fruit and vegetables purchased. Given that the local media have continuously reported complaints by consumers that the price of fresh food is too high, this comes as no surprise. Jamaluddin (2008) reported that the price of local beef was expected to reach RM25/kg compared to the normal average price of RM18 to RM20/kg. Ariff (2007) mentioned that although the price of imported beef was relatively cheaper compared to local beef, given that the supply was unsteady, prices were expected to rise. As a result of prices continuing to rise for chicken, given that the demand is so high, the government has decided to list chicken as a controlled item (Jalil 2009). Yahaya (2007) reported that consumers expressed their dissatisfaction over the need to spend more of their income to purchase food such as vegetables, fish and chicken. Given that the data was collected during Chinese New Year, which is one of the main festive seasons celebrated in Malaysia, the increasing prices of fresh food were a major concern for consumers.

Taste was also another factor mentioned by respondents which contributed to their level of dissatisfaction with the purchase of fresh/chilled meat and fresh fruit and vegetables from a retail store. Given that taste is a sensory characteristic which can only be evaluated after purchase, Grunert et al. (2004) mentioned that many other search quality cues, as well as meal preparation, are firmly linked to taste. Egan et al. (2001) suggested that the fat content and texture of the meat were attributes to influence taste. In the purchase of fresh produce, Yiridoe et al. (2007) linked taste, freshness and shelf life together. There have also been other studies which associate taste with credence characteristics such as organic. Harper and Makatouni (2002) demonstrated that consumers who purchased organic meat believed that the meat was more tasty than conventionally produced meat. In Malaysia, Majid (2007) reported that organic village chicken, which was locally grown, tasted better than the meat from chicken which had been given antibiotics and growth hormones. Given that the quality of food is a subjective matter from the consumers' point of view (Brunso et al. 2002), while the same quality cues reinforce the next purchase, they do not always deliver the taste that the consumers expect.

Cleanliness and Halal were among the reasons cited by respondents for their dissatisfaction with the fresh/chilled meat purchased from a retail store. Cleanliness was mainly associated with the place of purchase. Respondents were concerned and disturbed when doing their food shopping in an unhygienic environment. Shaari and Arifin (2009) revealed that consumers are unlikely to purchase if vendors do not practice cleanliness. While the Harakah Daily reported that Chow Kit market, which is situated in the heart of Kuala Lumpur, was unclean (*Masalah kebersihan Pasar Chow Kit terus mengganggu* 2009), the vendors indicated that there was no proper sanitation system in place. The Kuala Lumpur Wholesale Market is another market reported to be operating under unhygienic conditions (Seadey 2010). As a result of the unhygienic condition in most traditional retail outlets, consumers who are concerned about cleanliness may choose to purchase their fresh/chilled meat from a modern retail outlet. Jabbar and Admassu (2009) demonstrate that supermarkets operate a much cleaner environment than traditional stores.

The issues surrounding Halal are particularly important for Muslim consumers. A review of the literature identifies that the problem with Halal food in Malaysia arises from: (1) an abuse of the Halal logo and certification which can mislead consumers about the Halal status of the product (Hayati et al. 2008 [cited in Noordin et al. 2009]), and (2) the lack of enforcement by JAKIM to take legal action against these traders/retailers who have cheated the consumers (Shafie and Othman 2006). Given that Shaari and Arifin (2009) report that consumers in Malaysia must be constantly reassured that the product they are about to purchase is Halal, the presence of an Halal logo is important in choosing a food product. Beside the presence of a Halal logo or certificate, the findings of this research demonstrate that some consumers prefer to purchase their fresh/chilled meat from butchers that they trust.

When experiencing dissatisfaction with either the quality of fresh/chilled meat and fresh fruit and vegetables, both groups of respondents indicate that they would be more selective when they next purchased (Table 12.24).

Table 12.24: What respondents do when dissatisfied with quality of fresh/chilled meat and fresh fruit and vegetables purchased from a retail store

Fresh/chilled meat	Fresh fruit and vegetables
I am more selective the next time I buy	I am more selective the next time I buy

In other words, respondents held themselves responsible for their own inability to select fresh food from a retail store which would potentially satisfy their needs. The Consumers Association of Penang (CAP) [cited in Ramayah et al. 2003] agrees, stating that when Malaysian consumers experience dissatisfaction with a product, they get angry with themselves rather than the manufacturer. However, according to Ramayah et al. (2003), it is not uncommon for Malaysians to complain when dissatisfied with the purchase of a defective product. Given that the culture of Indonesians is relatively similar to Malaysia, Phau and Sari (2004) found that when Indonesian consumers were dissatisfied with a product or service, they often blame the retailers for providing such poor service or products in such a poor condition.

Heung and Lam (2003) discuss how cultural issues may affect consumer's complaint behaviour. For instance, Gao et al. (1996) [cited in Heung and Lam 2003] portrayed Chinese consumers as having a rather passive style of communication when expressing dissatisfaction. Given that in Asian cultures, it is important to maintain harmony within the customer-business relationship, most consumers avoid direct confrontation and remain in silence when they are dissatisfied (Heung and Lam 2003; Ngai et al. 2007).

Nevertheless, gathering information about consumers dissatisfaction with the products purchased is a significant aspect of consumer behaviour research. Otherwise, retailers may make an erroneous assumption that consumers are satisfied with the product offered in the market. Hernandez and Fugate (2004) mentioned that gathering knowledge about consumers' dissatisfaction and learning about customer complaint behaviour is essential because: (1) marketers are able to identify the sources which cause consumer disconfirmation; (2) to address those issues, and (3) to prevent consumer dissatisfaction or defection in the future.

The findings of this research reveal that consumers have different levels of confidence in believing that the fresh/chilled meat and fresh fruit and vegetables that they consume are safe to eat (Table 12.25).

Table 12.25: Confidence level

	Fresh/chilled meat		Fresh fruit and vegetables		Sig. (2-tailed)
	Mean	**SD**	**Mean**	**SD**	
How confident are you that the [type of product] that you consume are safe to eat?	5.08	0.89	4.57	0.89	0.000

where 1 is "not at all confident" and 6 is "very confident"

Unlike Peri (2006) and Keast (2009), who implicitly assume that the food purchased in any market is safe for consumption, this research demonstrates that respondents utilise various indicators to ascertain that the fresh/chilled meat and fresh fruit and vegetables are safe to eat (Table 12.26).

Table 12.26: Factors which lead respondents to conclude that the fresh/chilled meat and fresh fruit and vegetables were safe or not safe to eat

Fresh/chilled meat	Fresh fruit and vegetables
Halal	Freshness
Freshness	Based on previous experience
Cleanliness	Freedom from chemicals residues
Label/brand	Label
Vendors – friendly and knowledgeable	Texture

Freshness and label/brand were cited by respondents as signifying that the food was safe when purchasing both fresh/chilled meat and fresh fruit and vegetables from a retail store. Becker et al. (2000) and Hoffmann (2000) identified freshness as the most important intrinsic quality cues when assessing the safety of meat. Enneking (2004) and Latouche et al. (1998) demonstrated how a label, which is an extrinsic quality cue, was influential in reassuring consumers about the safety of meat products. Becker et al. (2000) and Hoffmann (2000) also suggest that the origin of the meat is an important extrinsic quality cue which signifies food safety.

Conversely, there is little empirical research which associates the freshness of fruit and vegetables with food that is safe to eat. Food safety attributes for fresh produce

are mainly associated with the presence of chemical residues as demonstrated by Baker (1999) and Caswell (2000).

Although labels provide information to consumers, with an increase in the number of cases involving the misuse of labels attached to food products, consumers may begin to doubt the accuracy of labels. In purchasing meat products, Bernues et al. (2003) identified a group of consumers who relied on their trusted retailer to assess the safety of the product, rather than to depend on the label/brand. This study also found that respondents often trusted friendly and knowledgeable vendors to seek assurances that the fresh/chilled meat they purchased was safe to eat.

The importance of Halal, which includes the slaughter and hygiene practices and its implications for food safety have already been discussed. Thus it comes as no surprise that cleanliness was identified as an additional variable respondents associated with the safety of fresh/chilled meat. Ali et al. (2010) demonstrated how the environment in a retail store and hygiene status of the meat-processing equipment can encourage the growth of potential pathogens that may contaminate the meat if not regularly cleaned and disinfected.

In the purchase of fresh fruit and vegetables, respondents utilise their previous experience to determine that the food purchased is safe to eat. Zanoli and Naspetti (2002) demonstrate that the more frequently consumers purchase a product, the more experience they gain. Eventually, with more information stored in their mind, Zanoli and Naspetti (2002) believe that experienced buyers become more expert than occasional buyers.

According to Siegrist et al. (2003) [cited in De Jonge et al. 2007], consumer confidence in the safety of food purchased is based on familiarity and develops from the accumulation of positive experiences. As fresh food often needs to be cooked before consumption, a food safety assessment can be done by consumers prior to consumption. In a similar study conducted in the food service industry, Henson et al. (2006) mentioned that many aspects of food safety involved experience characteristics. However, Henson et al. (2006) and Grunert (2005) acknowledge that consumers utilise a range of other criteria to link their experience

with food safety. Nevertheless, De Jonge et al. (2007) mentioned that consumers who have experienced food borne illness are more pessimistic about food safety when purchasing food.

12.4 Managerial implications

This thesis provides valuable information for marketers to understand the behaviour of Malaysian consumers when purchasing fresh/chilled meat and fresh fruit and vegetables. Initially, the preliminary research findings suggested that elderly respondents had a strong desire to purchase their fresh food from traditional markets. The main findings then revealed that many younger respondents continue to purchase the majority of their fresh/chilled meat and fresh fruit and vegetables from traditional markets. Some literature claims that traditional markets will soon be displaced, losing their customers to modern retailers who offer higher quality and safe products, one-stop shopping and a more pleasant environment for their shoppers (Trappey and Lai 1997; Goldman et al. 1999; Reardon et al. 2003; Figuie and Moustier 2009). Conversely, the findings of this study demonstrate that Malaysian consumers will continue to purchase the majority of their fresh food from traditional markets due to guarantees that the food is Halal, the friendly service provided by vendors and the ability to bargain on price. Although there is an emerging trend for consumers to purchase more of their fresh food from supermarkets and hypermarkets, the traditional markets should not be abandoned.

A consistent pattern was found where respondents emphasised similar criteria (freshness, cleanliness, price and Halal) in their decision to purchase fresh food from a retail store. Retailers from both markets can capitalise on the store choice attributes which influence consumers' purchasing behaviour. Issues involving Halal and the preference to purchase meat from a trusted butcher were found to be important for Malaysians when purchasing meat from a retail store. Issues such as Halal meat being stored together with non-Halal meat and consumers suing a hypermarket over non-Halal chicken have lessened consumers' trust in purchasing fresh/chilled meat from a modern retail outlet. Therefore, modern retailers must emphasise the importance of only offering fresh/chilled meat that is Halal. While most fresh/chilled meat in supermarkets and hypermarkets are labelled with a Halal

logo, it is still insufficient for consumers to believe that the meat was slaughtered appropriately and according to Islamic rulings. Thus, modern retailers should provide personal assurances through monitoring the supply chain or establishing dedicated supply chains to ensure that the supply of fresh/chilled meat to supermarkets and hypermarkets are genuinely Halal.

Furthermore, Malaysians have emphasised the importance of food safety and cleanliness when shopping for fresh food. Traditional retailers are anticipated to change the way they do business in response to these issues if they are to become more competitive. According to Webster (2004), the traditional markets have the potential to disappear if no attention is given to enhance food safety procedures. Webster (2004) added that due to food safety concerns in the purchase of fresh meat, consumers in Asia, particularly the younger consumers, have strong preferences towards purchasing meat that is chilled or frozen. As a result of this, retailers in the traditional markets are shifting towards more modern systems of selling meat to consumers. Kamaron (2003) reported that as a result of the outbreak of the Nipah virus in 1999, all meat must be sold chilled instead of at room temperature in Singapore. Galvez (2010) also found that wet markets in the Philippines have starting to sell some frozen meat. This approach could be imitated by vendors operating in most traditional markets in Malaysia to enhance consumers' confidence towards the safety of the fresh meat offered for sale. Intervention from the government and local authorities is also needed to maintain the cleanliness of traditional markets. Among the activities that can be carried out to maintain the cleanliness of these traditional markets are: (1) to make it compulsory for vendors to attend courses and training related to proper food handling and food safety before granting a license; (2) to conduct regular and compulsory health testing for vendors, and (3) to conduct regular inspections in terms of compliance to health and sanitation on premises.

The findings of this research which linked a group of variables with a number of desired outcomes has significant implications for the marketing of fresh/chilled meat and fresh fruit and vegetables. For instance, country-of-origin was among the variables respondents used to signify that the food was guaranteed Halal. However, based on the researcher's observation and discussion with participants from the

focus group discussions and the main surveys, this type of information is not always available for consumers. Among the advantages of knowing the origin of the food prior to purchase are: (1) a perception of how the animals were raised (the usage of chemicals, antibiotics or growth promotants) and how fruit and vegetables have been grown (chemical residues) which may either elevate or reduce consumers concerns that the food is safe to eat; (2) to enable consumers to select fresh food from a particular country which is perceived to offer a higher quality product compared to another; (3) to support local producers, and (4) to support ethical methods of farming such as sustainable production and worker welfare (Lohr 2001; Krissoff et al. 2004). As a result of this, government authorities should make it mandatory for retailers to provide information on the origin of the fresh food to consumers.

From the literature, it is apparent that consumers who have strong preference for food quality and food safety search for labels or certificates attached to the fresh produce that they intend to purchase. This may support the need for GAP systems to be implemented along the supply chain in an attempt to differentiate products sold in different retail markets. Large retailers such as supermarkets and hypermarkets have the capacity to demand that their suppliers comply with standards that meet the consumers' demand for food that is guaranteed safe to eat.

This research has also found an association between appropriate slaughter and Halal certification as an indicator that the fresh/chilled meat purchased by respondents is safe to eat. Previously, the issues that surround Halal were mainly a concern for Muslim consumers. However, Bonne and Verbeke (2006), Rezai (2008) and Talib et al. (2008) have discussed the benefits of consuming meat that is Halal from the safety point of view. Nowadays, consuming meat that is Halal will not only meet religious requirements, but also food safety requirements. As a result of this, consumers from other religions often enquire about Halal in their decision to purchase fresh/chilled meat from a retail store.

The findings revealed that consumers considered a range of criteria which may depend on several factors such as religion, beliefs, preferences and experiences in making their decision to purchase fresh/chilled meat and fresh fruit and vegetables

from a retail store. This indicates opportunities for actors along the fresh food supply chain to segment their markets. For instance, consumers who are often dissatisfied with the purchase of fresh fruit and vegetables from a retail outlet were found to attach much greater importance to Halal, food safety, health and nutrition. In order to attract this segment of consumers, starting from the farm level, fruit and vegetables should be cultivated according to specific quality standards. As mentioned by Shamsudin et al. (2010), all supply chain participants in the agri-food system should translate such changes in Malaysian food consumption patterns into business opportunities.

Additionally, the research has revealed the major reasons for consumers' dissatisfaction with their purchase of fresh/chilled meat and fresh fruit and vegetables. This finding provides a basis for the actors in the supply chain to understand how Malaysian consumers deal with dissatisfaction. It is uncommon for Malaysian consumers to voice their disappointment over the food products that they have purchased which creates ambiguity for retailers in knowing whether consumers are happy with their purchase or not. It may be less complicated for traditional retailers as they often obtain direct feedback from their customers with regards to their purchase. However, it presents a challenge for supermarkets and hypermarkets to learn about their customers' satisfaction or dissatisfaction with the fresh food purchased from a retail store, given that modern retailers seldom deal directly with their consumers. As a result of this, modern retailers need to regularly collect feedback and ideas from their shoppers through surveys and customer feedback forms, and deal with the issues that arise without delay.

In conclusion, the findings of this thesis may also assist the government in developing new strategies to further enhance the Malaysian food industry in conjunction with developing agriculture as the engine of growth in the Malaysian economy. Given that Malaysia relies heavily on imported food, the attributes utilised by consumers when purchasing fresh food could provide the basis for government to redevelop the livestock industry, and the fresh fruit and vegetable industry. As Malaysia still relies on imported food, the importance of providing good quality, Halal, safe and healthy food should not be neglected.

12.5 Limitations of the study

Several limitations were identified at different stages of the study which may impact on the analysis of data and the findings of this study. Some limitations were created intentionally to establish some research boundaries, while other limitations are identified as opportunities for future research.

In order to set a research boundary, this study was limited to Malaysian consumers residing in the Klang Valley only. As a result of this, the respondents who participated in this study may not be representative for the whole of Malaysia. The behaviour of respondents from urban areas such as the Klang Valley may differ from the behaviour of respondents in rural areas and from those respondents in Sarawak or Sabah. At present, only those respondents living in the major metropolitan centres have access to modern retail outlets. Consequently, consumers in the rural areas may be dependent on the traditional markets for procuring their fresh food.

Due to limitations in financing this research, as well as time constraints, the sample size for this study was small as compared to most other studies. When performing data analysis, a small sample size may decrease the power of the statistical tests applied. A larger sample is anticipated to produce a more generalised result and any significant differences between the groups are more likely to be identified if the sample size is larger (Sampling n.d.). However, according to Deming (1990), the size of a sample is not the sole criteria for accuracy. Deming (1990) added that other criteria such as the procedure for stratification, the choice of sampling unit, and the formulas prescribed for the estimations are more important than sample size. Despite the small sample size, particularly in recruiting respondents from different ethnic groups, the findings of this research were able to demonstrate different preferences towards a particular retail store. Given that this study was among the first conducted to examine consumers' perceptions and experiences in purchasing fresh food from retail outlets in Malaysia, the researcher thought that the sample size for this study was reasonable. The findings of this research add to the current literature and provide suggestions for retailers, local vendors and various agencies involved in the marketing and distribution of fresh food in Malaysia.

The groups of product for this study were strictly limited to fresh/chilled meat (chicken and beef) and fresh fruit and vegetables (potatoes, spinach and apples). There are other products in the fresh food category including seafood, eggs and other types of tropical fruit and vegetables. There is evidence from the literature that a similar methodology could be applied for different fresh food categories. Besides examining consumers' attitudes towards the quality of fresh meat (Verbeke and Viaene 1999), Verbeke et al. (2007) also analysed consumers' attitudes towards the quality of fish. It is anticipated that with different fresh food categories, different findings may emerge.

The methods of data collection may have also introduced several limitations. For instance, the employment of research enumerators with different characteristics such as age, gender and ethnicity may encourage a broader diversity of respondents to participate. In Asia, special respect is paid to the elderly people in many situations, which may make it difficult for a younger person to approach and interview an older unrelated person. A gap may have existed as a result of the different characteristics possessed by the researcher, research enumerators and the respondents which then affected the data collection phase of this research study.

In attempting to cluster the respondents according to their preferred place of purchase, the data was strictly limited to socio-demographic characteristics only. This study did not include other psychographic characteristics of the consumers such as their lifestyle, interests, behaviour and attitudes. The utilisation of psychographic characteristics has been found to be the most appropriate tool for segmenting consumers. Brown and Turley (1997) mention that the fundamental principles of using psychographic variables to segment consumers are: (1) the ability to go beyond surface characteristics (demographic variables), and (2) to understand consumers' motivations for purchasing and using the products. According to Malhotra et al. (2008), psychographic characteristics provide information about how the consumers think and behave. While psychographic characteristics allow the researcher to understand why consumers purchase the product, socio-demographic characteristics merely allow the researcher to describe who purchased a particular product (Brown and Turley 1997). Other researchers have identified the weaknesses of socio-economic segmentation as: (1) having a too

narrow understanding the consumer behaviour (Boedeker and Marjanen 1993) and (2) the weak association between consumers' purchase behaviour and the socio-economic variables (Romano and Stefani 2006).

Several opportunities for future research may resolve the methodological limitations, financial and time constraints as experienced in this study.

12.6 Recommendations for future research

Despite the limitations highlighted in the previous section, there are several areas that are seen as fertile directions for future research to expand and enhance current knowledge.

Given that this study was limited to a fixed geographic scope, the Central Region of Malaysia, subsequent research could draw a sample from other regions such as the Northern Region (Perlis, Kedah, Penang and Perak), East Coast Region (Kelantan, Terengganu and Pahang), Southern Region (Negeri Sembilan, Malacca and Johor) and East Malaysia (Sabah and Sarawak). Conducting the study in different geographic localities will be necessary to capture the different ethnic characteristics of the Malaysian population. Furthermore, additional studies will be useful to validate the findings drawn from this study.

It is suggested that future researchers draw a larger sample size for this type of consumer study in order to capture the diversity in socio-demographic variables. While the impact of socio-demographic variables on the behaviour of consumers when purchasing fresh food were not reported in this study, much of the literature reports that socio-demographic variables such as age, gender, level of income and educational background may affect consumers' decision to purchase fresh food. For instance, the sample for this study was comprised predominantly of younger women. The more elderly population may have different views on store choice and the criteria they consider in their decision to purchase fresh/chilled meat and fresh fruit and vegetables from a retail store. Moreover, with a larger sample size, cluster analysis could be performed to demonstrate the relationship between store attributes and the factors which influence the consumers' decision to purchase fresh food.

In the attempt to generate a larger and more diverse sample, it is suggested that future researchers recruit research enumerators from different backgrounds. For instance, in order to overcome the low response rate based on ethnicity, future researchers could recruit Chinese and Indian research enumerators. Furthermore, elderly research enumerators should also be employed in an attempt to capture the interest and participation of the elderly respondents. This is due to the fact that respondents may feel more comfortable exchanging views with someone who is from the same ethnic and age group.

As discussed previously, issues which concern Halal, health and food safety are important to consumers. As transformations are still occurring in the food retail industry, changes in consumer behaviour are anticipated. Criteria that are less important today may become more important in the future. Taking the findings of this research as a base, it will be interesting for future research to explore the changes taking place in the behaviour of the consumers, as well as in the Malaysian food retail industry.

Even though the findings revealed the importance respondents gave to Halal, health and food safety, the study did not utilise a mechanism to measure consumers' willingness to pay for these additional attributes. Baker (1999) demonstrated how consumers who had a strong preference for food safety were willing to pay more to procure certified chemical free apples. Botonaki et al. (2006) suggested that consumers who are more health conscious were willing to pay more to purchase organic produce. As a result, an opportunity exists for future research to examine the consumers' willingness to pay for products which are certified or guaranteed safe.

The statistical techniques utilised in this study may not be the only way to analyse the data. One recommendation for future research is to modify the structure of the questionnaire in order for prospective researchers to construct a Structural Equation Model (SEM). Byrne (2001, p. 3) defines SEM as a statistical methodology that takes a confirmatory approach to the analysis of theory. In SEM, the causal processes for the study are represented by a series of linear relationships that are then modelled to facilitate a clearer conceptualisation of the theory. For instance, in

signifying food that tastes good, SEM allows the relationship between a number of different variables to be explored.

Finally, this study could be further expanded to examine the impact of the modernisation of the food retail industry on retailers in the traditional markets in Malaysia. Factors such as food safety, everything under one roof, convenience and cleanliness were among the criteria identified in this study which attract consumers to supermarkets and hypermarkets. Although factors such as the guarantee that the food purchased is Halal and the relationship established with the same butcher may prevent customers from changing to different retail outlets, retailers from the traditional markets may be affected by other changes that are occurring in the food retail industry. This area could be further investigated to provide new knowledge on regoverning markets.

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Appendix 1: Pro-forma for focus group discussion

Consumer's Perceptions and Experiences of Food Quality in Purchasing Fresh Food from Retail Outlets in Malaysia

Participants' selection criteria: Respondents must the person responsible for the purchase of fresh food (beef, chicken, fruit and vegetables) for the household.

Preliminary research objectives:

The objectives of the preliminary research were proposed to identify several issues on:

1. The type of fresh food (which were from the fresh/chilled meat and fresh fruit and vegetables category) consumers most often purchase.
2. To understand consumers' store choice behaviour when purchasing fresh food.
3. The differences in the quality of fresh food between modern retail outlets and traditional markets.
4. To understand consumers' preference between self select and pre-packs when purchasing fresh food.
5. To explore consumers point of view with regard to several food safety issues.

1. Introduction

Good morning and welcome to the focus group session on **Consumer's Perceptions and Experiences of Food Quality in Purchasing Fresh Food From Retail Outlets in Malaysia.**

Thank you for your time to join the Focus Group Discussion.

My name is Norshamliza Chamhuri and I am a PhD student from the Curtin University of Technology, Australia. Assisting me is Ms Intan and she is a going to be our moderator for today's discussion.

We want to know your perceptions and experiences of food quality in purchasing fresh food from retail outlets. Examples of fresh food are fruits, vegetables and meat products such as beef and chicken.

We will conduct the focus group with a series of questions. There are no right or wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said.

Before we begin, let me remind you of some of the ground rules. Please speak up -- only one person should talk at a time. We are tape-recording the session because we don't want to miss any of your comments. If several are talking at the same

time, the tape will be difficult to transcribe and we may missed some of your comments.

We want to make sure that we hear everything you want to tell us, but we also need to make sure that everyone gets a chance to talk today. And please switch off your mobile phones as we do not want this to disturb on our discussion.

Participants are free to get themselves some drinks or food provided. You may also freely go to the toilet.

We try to keep this discussion as informal as possible. Relax while giving your output on the discussions.

The first session will last about two and a half hours and we will be taking a formal break for one hour, before we begin the second session. Well, let's begin.

[We will have a short introduction session to break the ice]

Topics on fresh/chilled meat

2. Store choice behaviour

1. From where do you buy most of the fresh/chilled meat that you consume in your household?
2. What percentage do you buy from the:

a. wet market

b. supermarket

c. others: ……..

3. Why do you purchase most of your fresh/chilled meat from this source?

3. Quality of fresh/chilled meat

1. When we talk about quality of fresh/chilled meat, what does it mean to you?
2. Do you perceive any differences in the quality of fresh/chilled meat between wet markets and supermarkets?
3. When you buy your fresh/chilled meat, do you prefer self select or pre-packs?
4. Do you see any differences in the quality between self select and pre-packs when you buy your fresh/chilled meat?

4. Chicken

1. How often do you purchase chicken?
2. How do you prepare/cook chicken?
3. Do you purchase a whole chicken or chicken portions? Which portions?
4. Do you prefer to buy fresh, chilled or frozen chicken?
5. What do you look for in your decision to purchase chicken?
6. Why are each of these attributes important to you? What do they signify? What do they lead to?
7. Show participants several photos of chicken. Are they interest to purchase the meat in the photograph?
8. What is the price do you normally pay for?

5. Beef

1. How often do you purchase beef?
2. How do you prepare/cook beef?
3. State your preferences for different types of beef cuts?
4. Do you prefer to buy fresh, chilled or frozen beef?
5. What do you look for in your decision to purchase beef?
6. Why are each of these attributes important to you? What do they signify? What do they lead to?
7. Show participants several photos of beef. Are they interest to purchase the meat in the photograph?
8. What is the price do you normally pay for?

6. Dealing with dissatisfaction

1. When you are dissatisfied with the quality of chicken and beef your have purchased, what do you do?

7. Food safety issues

1. How confident are you in the Malaysian food system in terms of managing each of the following:

a. Halal
b. Organically produced food (Organic beef, Organic chicken)
c. Genetically modified food

d. Bacterial contamination (Salmonella)/ Hygiene
e. Animal diseases such as mad cow disease and the avian flu
f. Hormones, antibiotics and chemicals in animals

2. Have you ever avoided or boycotted a particular food product because you were concerned about food safety? Is your boycott usually on a temporary basis or permanent?

[Break for lunch (1 hour)].

Appendix 2: Pro-forma for focus group discussion

Topics on fresh fruit and vegetables

1. Store choice behaviour

1. Which fresh fruit and vegetables do you most often purchase?
2. From where do you buy most of the fresh fruit and vegetables that you consume in your household?
3. What percentage do you buy from the:

a. wet market
b. supermarket
c. others: ……..

4. Why do you purchase most of your fresh fruit and vegetables from this source?

2. Quality of fresh fruit and vegetables

1. When we talk about quality of fresh fruit and vegetables, what does it mean to you?
2. Do you perceive any differences in the quality of fresh fruit and vegetables between wet markets and supermarkets?
3. When you buy your fresh fruit and vegetables, do you prefer self select or pre-packs?
4. Do you see any differences in the quality between self select and pre-packs when you buy your fresh fruit and vegetables?

3. Potatoes

1. How do you use/cook potatoes?
2. What do you look for in your decision to purchase potatoes?
3. Why are each of these attributes important to you? What do they signify? What do they lead to?
4. Show participants several photos of potatoes. Are they interest to purchase the potatoes in the photograph?
5. What is the price do you normally pay for?

4. Spinach

1. How do you use/cook spinach?
2. What do you look for in your decision to purchase spinach?
3. Why are each of these attributes important to you? What do they signify? What do they lead to?
4. Show participants several photos of spinach. Are they interest to purchase the spinach in the photograph?
5. What is the price do you normally pay for?

5. Apples

1. How do you use/cook apples?
2. What do you look for in your decision to purchase apples?
3. Why are each of these attributes important to you? What do they signify? What do they lead to?
4. Show participants several photos of apples. Are they interest to purchase the spinach in the photograph?
5. What is the price do you normally pay for?

6. Dealing with dissatisfaction

1. When you are dissatisfied with the quality of fresh fruit and vegetables your have purchased, what do you do?

7. Food safety issues

1. How confident are you in the Malaysian food system in terms of managing each of the following:

a. Organically produced food
b. Genetically modified fruit and vegetables
c. Chemical residues in plants

2. Do you wash your fruit and vegetables before you cook them? Why?

8. Socio-Demographic Questions

1. Gender:

- [ ] Male
- [ ] Female

2. Age:

- [ ] 18 – 25 years
- [ ] 26 – 34
- [ ] 35 – 44
- [ ] 45 – 54
- [ ] 55 – 64
- [ ] 65 and above

3. Marital status:

- [ ] Single
- [ ] Married
- [ ] Divorced
- [ ] Others: _____

4. Education level:

- [ ] UPSR
- [ ] PMR
- [ ] SPM/ O-levels
- [ ] STPM/ A-levels/ Pre-U/ Diploma
- [ ] Degree/ Professional
- [ ] Postgraduate

5. Occupation:

- [ ] Student
- [ ] Unemployed
- [ ] Housewife
- [ ] Full-time staff (government)
- [ ] Full-time staff (private)
- [ ] Self employed
- [ ] Others: ……

6. Ethnicity :

- [ ] Malay
- [ ] Chinese
- [ ] Indians
- [ ] Others: _____

7. How many people live in your household? _____

8. Do you have any young children? How many? _____

- [ ] Children aged less than 5 years old. _____
- [ ] Children aged between 6-12 years old. _____
- [ ] Teenagers aged between 13-17 years old. _____

9. In which suburb/town do you live? _____

10. Average monthly income:

- [ ] ≤ RM1,500
- [ ] RM1,501 – RM3,000
- [ ] RM3,001 – RM4,500
- [ ] RM4,501 – RM6,000
- [ ] RM6,001 – RM7,500
- [ ] RM7,501 – RM9,000
- [ ] ≥ RM9,001

11. Any comments regarding this focus group discussion/research:

…….

…….

…….

…….

Thank you for your kind response.

Hello.

Good morning/afternoon/evening. My name is Norshamliza Chamhuri. I am currently doing a PhD in agribusiness at Curtin University of Technology, Perth, Australia.

I am conducting a study on consumer's perceptions and experiences of food quality in purchasing fresh food from retail outlets in Malaysia.

This survey will take approximately 15 minutes to complete. Do you have the time to complete this survey?

YES Proceed
NO Thank the respondent

Are you a Malaysian and currently residing in Klang Valley?

YES Proceed
NO Thank the respondent

In your household, are you personally involved in the decision to purchase fresh food?

YES Proceed
NO Thank the respondent

Would you like to answer this questionnaire in

BAHASA Hand in the questionnaire in Bahasa
ENGLISH Hand in the questionnaire in English

Before we proceed, I would like to assure you that all the information we collect will be kept in the strictest confidence and used for research purposes only.

From the data that we collect, analyse and publish, it will not be possible to identity any individual.

Furthermore, your participation in this survey is completely voluntary. Should you necessary, you may withdraw at any time without prejudice.

Appendix 3: Fresh/chilled meat questionnaire

CONSUMER'S PERCEPTIONS AND EXPERIENCES OF FOOD QUALITY IN PURCHASING FRESH FOOD FROM RETAIL OUTLETS IN MALAYSIA

This box is for office use only:

Kod responden:
Nama pembanci:
Tarikh membanci:
Tempat membanci:
Masa mula/ tamat membanci:
Disemak oleh:

1. From where do you buy MOST of the **fresh/ chilled meat** that you consume in your household?

   [Please circle ONE answer only]

   1. Supermarket
   2. Hypermarket
   3. Wet market/ Fresh market
   4. Farmers market
   5. Night market
   6. Wholesale market
   7. Grocery store/ mini market

2. How often do you purchase **fresh/ chilled meat** from this retail outlet?

   [According to your answer in Question1, please circle ONE answer only]

   1. Daily
   2. 2-3 times per week
   3. Once a week
   4. Once every 2 weeks
   5. Once a month
   6. Others: …….[Please specify]

3. What proportion of the total amount of the **fresh/ chilled meat** that you buy are purchased from this retail outlet? [According to your answer in Question 1]

   …….(%)

   If you purchase 100% of your **fresh/ chilled meat** from this retail outlet, please go to Question 5 on page 2.

4. From where else do you purchase **fresh/ chilled meat**? Please tick all of those retail outlets from which you purchase **fresh/ chilled meat** and indicate the proportion of the **fresh/ chilled meat** that you buy. Please include the figure from Question 3 to ensure that the total = 100%

	√	%
Supermarket		
Hypermarket		
Wet market/ Fresh market		
Farmers market		
Night market		
Wholesale market		
Grocery store/ mini market		
	TOTAL	100%

5. In making your decision to purchase **fresh/ chilled meat** from your preferred retail outlet, what are the major criteria that influence your choice?

a) …….
b) …….
c) …….
d) …….
e) …….

6. On a scale of 1 to 6 where 1 is “Not at all important” and 6 is “Very important”, how important are EACH of the following criteria in your choice of retail outlet?

	Not at all important					Very important
Competitive price	1	2	3	4	5	6
Clean	1	2	3	4	5	6
Easy parking	1	2	3	4	5	6
Everything all under one roof	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Near my house/ work place	1	2	3	4	5	6
Shopping points/ loyalty programs	1	2	3	4	5	6
Cater for kids	1	2	3	4	5	6
Trolley and baskets are provided	1	2	3	4	5	6
Air-conditioned	1	2	3	4	5	6
Offer special prices or discounts	1	2	3	4	5	6
Well organized/ well laid out	1	2	3	4	5	6
A lot of sections (wet and dry sections)	1	2	3	4	5	6
I can self select	1	2	3	4	5	6
Good customer service/ friendly staff	1	2	3	4	5	6
Attractive display/ presentation	1	2	3	4	5	6
Good quality produce	1	2	3	4	5	6
All product is clearly priced	1	2	3	4	5	6
Knowledgeable staff	1	2	3	4	5	6
Advertising on radio/ tv/ newspaper	1	2	3	4	5	6
Return/ refund policy	1	2	3	4	5	6
Trading hours	1	2	3	4	5	6
A wide range of fresh produce	1	2	3	4	5	6
A wide range of other fresh products	1	2	3	4	5	6
Fresh produce is refrigerated	1	2	3	4	5	6
Opportunity to bargain on price	1	2	3	4	5	6
Origin of the product is clearly displayed	1	2	3	4	5	6
Sample of the product	1	2	3	4	5	6
Local produce	1	2	3	4	5	6
Product easily accessible	1	2	3	4	5	6
Credit facilities	1	2	3	4	5	6
Quick/ fast checkout	1	2	3	4	5	6
Loyalty/ always shop there	1	2	3	4	5	6
Product is clearly labeled	1	2	3	4	5	6

7. When you think about the quality of the **fresh/ chilled meat** that you buy, what criteria do you consider?

a) …….
b) …….
c) …….
d) …….
e) …….

8. Quality means many different things to different people. Here are some of the responses other people have provided. On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot", how important are EACH of the following statements.

Quality means that the product…	I disagree a lot					I agree a lot
is fresh	1	2	3	4	5	6
is free of chemical residues	1	2	3	4	5	6
will taste good	1	2	3	4	5	6
is nutritious	1	2	3	4	5	6
is safe to eat	1	2	3	4	5	6
has been produced in a way that is good for the environment	1	2	3	4	5	6
was produced in a way that did not endanger the farmers	1	2	3	4	5	6
is free from pests and diseases	1	2	3	4	5	6
is free from antibiotics/ growth promotants	1	2	3	4	5	6
looks attractive	1	2	3	4	5	6
will have a long shelf life	1	2	3	4	5	6
is good value for money	1	2	3	4	5	6
I will not be disappointed when I eat the product	1	2	3	4	5	6
I will be able to use most if not all of the product I have purchased	1	2	3	5	5	6
is attractively packaged	1	2	3	4	5	6
will be more expensive	1	2	3	4	5	6
is guaranteed Halal	1	2	3	4	5	6
was produced and with due regard for animal welfare	1	2	3	4	5	6

9. Do you perceive any differences in the quality of **fresh/ chilled meat** between modern retail outlets and traditional markets? [Please circle ONE answer only]

1. Yes
2. No

10. Which of the two retail outlets offer the best quality meat?

    [Please circle ONE answer only]

    1. Modern retail outlets
    2. Traditional markets

11. In what ways is the quality of meat better from this retail outlet? [According to your answer in Question 10]

    a) …….
    b) …….
    c) …….
    d) …….
    e) …….

12. On a scale of 1 to 6 where 1 is “I disagree a lot” and 6 is “I agree a lot” to what extent do you disagree or agree with EACH of these statements:

	I disagree a lot					I agree a lot
The quality of the fresh meat available is better in supermarkets	1	2	3	4	5	6
Supermarkets operate everyday while traditional markets operate only on certain days of the week	1	2	3	4	5	6
Consumers can bargain on price in wet markets	1	2	3	4	5	6
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	1	2	3	4	5	6
I often meet my friends when I shop at traditional markets	1	2	3	4	5	6
Supermarkets offer a wider range of fresh food	1	2	3	4	5	6
At traditional markets, the vendors remember my name	1	2	3	4	5	6
I cannot buy the other household items I need if I shop at traditional markets	1	2	3	4	5	6
I go to supermarkets because of the shopping points I get	1	2	3	4	5	6
The children feel comfortable when I shop at supermarkets	1	2	3	4	5	6
Traditional markets seldom have a good or clean environment	1	2	3	4	5	6
Supermarkets offer better customer service than the traditional markets	1	2	3	4	5	6
I can return easily goods if I’m not satisfied when I buy them from traditional markets	1	2	3	4	5	6
I buy my other household goods from supermarkets but I buy my chicken and beef supplies from traditional markets	1	2	3	4	5	6
Traditional markets offer better quality meat at a much cheaper price	1	2	3	4	5	6
I can return easily goods that I’m not satisfied with after purchasing it from supermarkets	1	2	3	4	5	6
Fresh meat is displayed better in supermarkets	1	2	3	4	5	6
Chicken and beef are fresher in traditional markets	1	2	3	4	5	6
I prefer to buy my fresh meat from the same vendor in the traditional markets	1	2	3	4	5	6
Products in the supermarkets is clearly priced	1	2	3	4	5	6
Retailers in the traditional market are more knowledgeable about the products they sell	1	2	3	4	5	6

Do you buy **chicken**?

YES Proceed to Question 13
NO Please go to Question 22 on page 11

13. Thinking specifically about **chicken**, how often do you purchase **chicken**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

14. In what form do you most often buy fresh/ chilled **chicken**? Please indicate the proportion (%) for EACH form that you buy.

	(%)
Whole dressed chicken	
Chicken portions	
Chicken drumsticks	
Fillets skin on	
Fillets skin off	
Chicken wings	
Chicken feet	
Chicken liver	
Chicken ribs/ keel	
Chicken center	
Chicken minced	
Chicken bishop	
Chicken cubes	
Chicken breast	
Chicken thigh	
Chicken gizzard	
TOTAL	**100%**

15. How do you cook **chicken** in your household?

a)…….
b)…….
c)…….
d)…….
e)…….

16. What criteria do you use in your decision to purchase **fresh/ chilled chicken** from retail outlets?

a)…….
b)…….
c)…….
d)…….
e)…….

17. Thinking about **chicken**, how important are each of the following criteria in your decision to purchase where 1 is "Not at all important" and 6 is "Very important",

	Not at all important					Very important
Appropriately slaughtered (Halal)	1	2	3	4	5	6
Halal certificate	1	2	3	4	5	6
Quality assurance label	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Skin colour	1	2	3	4	5	6
Flesh colour	1	2	3	4	5	6
Smell/ Odour	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Intended use	1	2	3	4	5	6
Fat content	1	2	3	4	5	6
Clean/ no flies	1	2	3	4	5	6
Size	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Available as individual parts	1	2	3	4	5	6
Pre-packed	1	2	3	4	5	6
Free of chemical/ growth promotants	1	2	3	4	5	6
Free from antibiotics	1	2	3	4	5	6
Raised in a humane way	1	2	3	4	5	6
Grown on local farms	1	2	3	4	5	6
Organically grown	1	2	3	4	5	6
Marbling	1	2	3	4	5	6
Leanness	1	2	3	4	5	6
Label/ brand	1	2	3	4	5	6

18. Which of the following criteria in Question 17 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 15
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

19. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase fresh/ chilled **chicken**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

20. On average, how often do you feel **unhappy** with the quality of **chicken** you have purchased from your preferred retail outlet with regard to the following desired outcomes? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

21. What are the main reasons for your **dissatisfaction** with the quality of the **chicken** you have purchased?

a) …….
b) …….
c) …….
d)…….
e) …….

Do you buy **beef**?

YES Proceed to Question 22
NO Please go to Question 31 on page 15

22. Thinking specifically about **beef**, how often do you purchase **beef**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

23. In what form do you most often buy **fresh/ chilled beef**? Please indicate the proportion (%) for EACH form that you buy.

	(%)
Beef cube	
Beef strip	
Beef chuck tender	
Beef eye round	
Soup meat	
Beef minced	
Beef bone (soup)	
Beef cutlet	
Beef t-bone	
Beef fillet	
Beef topside	
Beef tenderloin	
Ox tail	
TOTAL	**100%**

24. How do you cook **beef** in your household?

a) …….
b) …….
c) …….
d) …….
e) …….

25. What criteria do you use in your decision to purchase **fresh/ chilled beef** from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

26. Thinking about **beef**, how important are each of the following criteria in your decision to purchase where 1 is "Not at all important" and 6 is "Very important",

	Not at all important					Very important
Skin colour	1	2	3	4	5	6
Flesh colour	1	2	3	4	5	6
Size	1	2	3	4	5	6
Clean/ no flies	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Smell/ Odour	1	2	3	4	5	6
Available as individual parts	1	2	3	4	5	6
Quality assurance label	1	2	3	4	5	6
Halal certificate	1	2	3	4	5	6
Appropriately slaughtered (Halal)	1	2	3	4	5	6
Intended use	1	2	3	4	5	6
Pre-packed	1	2	3	4	5	6
Label/ brand	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Free from antibiotics	1	2	3	4	5	6
Organically grown	1	2	3	4	5	6
Marbling/ fat content	1	2	3	4	5	6
Free of chemical/ growth promotants	1	2	3	4	5	6
Leanness	1	2	3	4	5	6
Grown on local farms	1	2	3	4	5	6
Raised in a humane way	1	2	3	4	5	6

27. Which of the following criteria in Question 26 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 26
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

28. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase **fresh/ chilled beef**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

29. On average, how often do you feel **unhappy** with the quality of **beef** you have purchased from your preferred retail outlet with regard to the following desired outcome? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

30. What are the main reasons for your **dissatisfaction** with the quality of the **beef** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

31. When you are **dissatisfied** with the quality of **fresh/ chilled meat** you have purchased, what do you do? On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot" to what extent do you disagree/ agree with EACH of these statements:

	I disagree a lot					I agree a lot
I am always satisfied with my purchase	1	2	3	4	5	6
I throw them out	1	2	3	4	5	6
I change shops	1	2	3	4	5	6
I inform/ complain to the seller	1	2	3	4	5	6
I return it to the shop	1	2	3	4	5	6
I just eat it/ cook it	1	2	3	4	5	6
I stop buying	1	2	3	4	5	6
I am more selective the next time I buy	1	2	3	4	5	6
I purchase less	1	2	3	4	5	6
I do nothing	1	2	3	4	5	6
I change brands	1	2	3	4	5	6

32. On a scale of 1 to 6 where 1 is "Not at all confident" and 6 is "Very confident", how confident are you that the **fresh/ chilled meat** that you consume are safe to eat? [Please circle ONE answer only]

Not at all confident Very confident

1	2	3	4	5	6

33. According to your response in Question 32, what factors lead you to conclude that the **fresh/ chilled meats** that you buy are safe or not safe to eat?

a) …….
b) …….
c) …….
d) …….
e) …….

34. How confident are you of the Malaysian food system in terms of managing each of the following, where 1 is “Not at all confident” and 6 is “Very confident”,

	Not at all confident					Very confident
Organically produced food	1	2	3	4	5	6
Genetically modified fruits and vegetables	1	2	3	4	5	6
Chemical residues	1	2	3	4	5	6
Fair trade	1	2	3	4	5	6
Sustainable production	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Water pollution	1	2	3	4	5	6
Waste management	1	2	3	4	5	6
Conservation biodiversity	1	2	3	4	5	6
Animal welfare	1	2	3	4	5	6
Recycling packaging	1	2	3	4	5	6
Halal	1	2	3	4	5	6
Hormones, antibiotics and growth promotants	1	2	3	4	5	6
Functional foods/ probiotics	1	2	3	4	5	6
Microbial contamination	1	2	3	4	5	6

35. Have you ever avoided or boycotted a particular food product because you were concerned about food safety?

…….
…….
…….
…….
…….

36. Is your boycott usually on a temporary basis or permanent? What are the reasons for your boycott?

…….
…….
…….
…….
…….

And finally, a few questions about yourself:

37. Gender (Please circle ONE answer only):

1. Male
2. Female

38. Age (Please circle ONE answer only):

1. 18 – 25 years old
2. 26 – 34 years old
3. 35 – 44 years old
4. 45 – 54 years old
5. 55 – 64 years old
6. 65 and above

39. Marital status (Please circle ONE answer only):

1. Single
2. Married
3. Divorced/ widowed
4. Others: ……[Please specify]

40. Education level (Please circle ONE answer only):

1. Primary school
2. Secondary school
3. Diploma
4. First degree/ professional certificate
5. Postgraduate

41. Occupation: ……[Please specify]

42. Race (Please circle ONE answer only):

1. Malay
2. Chinese
3. Indian
4. Others:……[Please specify]

43. Including yourself, how many people live in your household? _____ people

44. Do you have any children under 18 living in your household? (Please circle ONE answer only):

1. Yes Proceed to Question 45
2. No Please go to Question 46

45.How many?

	Children aged less than 5 years old: _____ people.
	Children aged between 6 – 12 years old: _____ people.
	Teenagers aged between 13 – 17 years old: _____ people.

46.Your postcode area: …….[Please specify]

47. Your monthly income (for single); Your combined income (for married); Your spouse's income (for non-working individuals):

(Please circle ONE answer only):

1. Less than RM1,500
2. RM1,501 – RM3,000
3. RM3,001 – RM4,500
4. RM4,501 – RM6,000
5. RM6,001 – RM7,500
6. RM7,501 – RM9,000
7. RM9,001 and above.

Thank you for your kind response.

Appendix 4: Fresh fruit and vegetable questionnaire

CONSUMER'S PERCEPTIONS AND EXPERIENCES OF FOOD QUALITY IN PURCHASING FRESH FOOD FROM RETAIL OUTLETS IN MALAYSIA

This box is for office use only:

Kod responden:
Nama pembanci:
Tarikh membanci:
Tempat membanci:
Masa mula/ tamat membanci:
Disemak oleh:

1. From where do you buy MOST of the fresh fruit and vegetables that you consume in your household?

   [Please circle ONE answer only]

   1. Supermarket
   2. Hypermarket
   3. Wet market/ Fresh market
   4. Farmers market
   5. Night market
   6. Wholesale market
   7. Grocery store/ mini market

2. How often do you purchase fresh fruit and vegetables from this retail outlet?

   [According to your answer in Question1, please circle ONE answer only]

   1. Daily
   2. 2-3 times per week
   3. Once a week
   4. Once every 2 weeks
   5. Once a month
   6. Others: …….[Please specify]

3. What proportion of the total amount of the fresh fruit and vegetables that you buy are purchased from this retail outlet? [According to your answer in Question 1]

   …….(%)

   If you purchase 100% of your fresh fruit and vegetables from this retail outlet, please go to Question 5 on page 2.

4. From where else do you purchase fresh fruit and vegetables? Please tick all of those retail outlets from which you purchase fresh fruit and vegetables and indicate the proportion of the fresh fruit and vegetables that you buy. Please include the figure from Question 3 to ensure that the total = 100%

	√	%
Supermarket		
Hypermarket		
Wet market/ Fresh market		
Farmers market		
Night market		
Wholesale market		
Grocery store/ mini market		
	TOTAL	100%

5. In making your decision to purchase fresh fruit and vegetables from your preferred retail outlet, what are the major criteria that influence your choice?

a) …….
b) …….
c) …….
d) …….
e) …….

6. On a scale of 1 to 6 where 1 is “Not at all important” and 6 is “Very important”, how important are EACH of the following criteria in your choice of retail outlet?

	Not at all important					Very important
Competitive price	1	2	3	4	5	6
Clean	1	2	3	4	5	6
Easy parking	1	2	3	4	5	6
Everything all under one roof	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Near my house/ work place	1	2	3	4	5	6
Shopping points/ loyalty programs	1	2	3	4	5	6
Cater for kids	1	2	3	4	5	6
Trolley and baskets are provided	1	2	3	4	5	6
Air-conditioned	1	2	3	4	5	6
Offer special prices or discounts	1	2	3	4	5	6
Well organized/ well laid out	1	2	3	4	5	6
A lot of sections (wet and dry sections)	1	2	3	4	5	6
I can self select	1	2	3	4	5	6
Good customer service/ friendly staff	1	2	3	4	5	6
Attractive display/ presentation	1	2	3	4	5	6
Good quality produce	1	2	3	4	5	6
All product is clearly priced	1	2	3	4	5	6
Knowledgeable staff	1	2	3	4	5	6
Advertising on radio/ tv/ newspaper	1	2	3	4	5	6
Return/ refund policy	1	2	3	4	5	6
Trading hours	1	2	3	4	5	6
A wide range of fresh produce	1	2	3	4	5	6
A wide range of other fresh products	1	2	3	4	5	6
Fresh produce is refrigerated	1	2	3	4	5	6
Opportunity to bargain on price	1	2	3	4	5	6
Origin of the product is clearly displayed	1	2	3	4	5	6
Sample of the product	1	2	3	4	5	6
Local produce	1	2	3	4	5	6
Product easily accessible	1	2	3	4	5	6
Credit facilities	1	2	3	4	5	6
Quick/ fast checkout	1	2	3	4	5	6
Loyalty/ always shop there	1	2	3	4	5	6
Product is clearly labeled	1	2	3	4	5	6

7. When you think about the quality of the fresh fruit and vegetables that you buy, what criteria do you consider?

a) …….
b) …….
c) …….
d) …….
e) …….

8. Quality means many different things to different people. Here are some of the responses other people have provided. On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot", how important are EACH of the following statements.

Quality means that the product…	I disagree a lot					I agree a lot
is fresh	1	2	3	4	5	6
is free of chemical residues	1	2	3	4	5	6
will taste good	1	2	3	4	5	6
is nutritious	1	2	3	4	5	6
is safe to eat	1	2	3	4	5	6
has been produced in a way that is good for the environment	1	2	3	4	5	6
was produced in a way that did not endanger the farmers	1	2	3	4	5	6
is free from pests and diseases	1	2	3	4	5	6
is free from dirt and soil	1	2	3	4	5	6
looks attractive	1	2	3	4	5	6
will have a long shelf life	1	2	3	4	5	6
is good value for money	1	2	3	4	5	6
I will not be disappointed when I eat the product	1	2	3	4	5	6
I will be able to use most if not all of the product I have purchased	1	2	3	5	5	6
is attractively packaged	1	2	3	4	5	6
will be more expensive	1	2	3	4	5	6

9. Do you perceive any differences in the quality of fresh fruit and vegetables between modern retail outlets and traditional markets? [Please circle ONE answer only]

    1. Yes
    2. No

10. Which of the two retail outlets offer the best quality of fresh fruit and vegetables?

    [Please circle ONE answer only]

    1. Modern retail outlets
    2. Traditional markets

11. In what ways is the quality of fresh fruit and vegetables better from this retail outlet? [According to your answer in Question 10]

    a) …….
    b) …….
    c) …….
    d) …….
    e) …….

12. On a scale of 1 to 6 where 1 is “I disagree a lot” and 6 is “I agree a lot” to what extent do you disagree or agree with EACH of these statements:

	I disagree a lot					I agree a lot
The quality of the fresh produce available is better in supermarkets	1	2	3	4	5	6
Supermarkets operate everyday while traditional markets operate only on certain days of the week	1	2	3	4	5	6
Consumers can bargain on price in wet markets	1	2	3	4	5	6
Its more convenient to shop in supermarkets because I can buy all my groceries at the same time	1	2	3	4	5	6
I often meet my friends when I shop at traditional markets	1	2	3	4	5	6
Supermarkets offer a wider range of fresh food	1	2	3	4	5	6
At traditional markets, the vendors remember my name	1	2	3	4	5	6
I cannot buy the other household items I need if I shop at traditional markets	1	2	3	4	5	6
I go to supermarkets because of the shopping points I get	1	2	3	4	5	6
The children feel comfortable when I shop at supermarkets	1	2	3	4	5	6
Traditional markets seldom have a good or clean environment	1	2	3	4	5	6
Supermarkets offer better customer service than the traditional markets	1	2	3	4	5	6
I can return easily goods if I’m not satisfied when I buy them from traditional markets	1	2	3	4	5	6
I buy my other household goods from supermarkets but I buy my fruit and vegetables from traditional markets	1	2	3	4	5	6
Traditional markets offer better quality produce at a much cheaper price	1	2	3	4	5	6
I can return easily goods that I’m not satisfied with after purchasing it from supermarkets	1	2	3	4	5	6
Fresh produce is displayed better in supermarkets	1	2	3	4	5	6
Fruit and vegetables are fresher in traditional markets	1	2	3	4	5	6
I prefer to buy my fresh fruit and vegetables from the same vendor in the traditional markets	1	2	3	4	5	6
Products in the supermarkets is clearly priced	1	2	3	4	5	6
Retailers in the traditional market are more knowledgeable about the products they sell	1	2	3	4	5	6

Do you buy **potatoes**?

YES Proceed to Question 13
NO Please go to Question 20 on page 11

13. Thinking specifically about **potatoes**, how often do you purchase **potatoes**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

14. What criteria do you use in your decision to purchase fresh **potatoes** from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

15. With regard to **potatoes**, how important are each of the following criteria in your decision to purchase where 1 is "Not at all important" and 6 is "Very important",

	Not at all important					Very important
Skin colour	1	2	3	4	5	6
Washed	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Intended use	1	2	3	4	5	6
Free from soil	1	2	3	4	5	6
Variety	1	2	3	4	5	6
Flesh colour	1	2	3	4	5	6
Depth of eyes	1	2	3	4	5	6
Freedom from pests and disease	1	2	3	4	5	6
Freedom from sprouting	1	2	3	4	5	6
Freedom from chemical residues	1	2	3	4	5	6
Firmness	1	2	3	4	5	6
Tuber size	1	2	3	4	5	6
Tuber shape	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Label or brand	1	2	3	4	5	6
Availability of product information in-store	1	2	3	4	5	6
Newspaper advertising/ catalogues	1	2	3	4	5	6
Advice from sales assistants	1	2	3	4	5	6
Potatoes is prepacked	1	2	3	4	5	6
Place of purchased	1	2	3	4	5	6
Locally grown	1	2	3	4	5	6
Organic	1	2	3	4	5	6
Favourable prior purchase	1	2	3	4	5	6

16. Which of the following criteria in Question 15 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 15
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

17. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase fresh **potatoes**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

18. On average, how often do you feel **unhappy** with the quality of **potatoes** you have purchased from your preferred retail outlet with regard to the following desired outcomes? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

19. What are the main reasons for your **dissatisfaction** with the quality of the **potatoes** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

Do you buy **spinach**?

YES Proceed to Question 20
NO Please go to Question 27 on page 15

20. Thinking specifically about **spinach**, how often do you purchase **spinach**?

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

21. Thinking specifically about **spinach,** what criteria do you use in your decision to purchase fresh spinach from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

22. With regard to **spinach,** how important are each of the following criteria in your decision to purchase where 1 is “Not at all important” and 6 is “Very important”,

	Not at all important					Very important
Colour	1	2	3	4	5	6
Leaves	1	2	3	4	5	6
Organic	1	2	3	4	5	6
Freedom from blemish and bruise	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Firmness of the stem	1	2	3	4	5	6
Free from soil	1	2	3	4	5	6
Free of wilting	1	2	3	4	5	6
Freedom of pest and disease	1	2	3	4	5	6
Favourable prior purchase	1	2	3	4	5	6
Size	1	2	3	4	5	6
Locally grown	1	2	3	4	5	6
Spinach is sold loose	1	2	3	4	5	6
Spinach is tied in bunches	1	2	3	4	5	6
Spinach is prepacked	1	2	3	4	5	6
Stem removed	1	2	3	4	5	6
Freedom of chemical residues	1	2	3	4	5	6
Variety	1	2	3	4	5	6
Value for money	1	2	3	4	5	6

23. Which of the following criteria in Question 22 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 22
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

24. On a scale of 1 to 6 where 1 is "Not at all important" and 6 is "Very important", how important are EACH of the following criteria in your decision to purchase fresh **spinach**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

25. On average, how often do you feel **unhappy** with the quality of **spinach** you have purchased from your preferred retail outlet with regard to the following desired outcome? Please √ your answer.

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

26. What are the main reasons for your **dissatisfaction** with the quality of the **spinach** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

Do you buy **apples**?

YES Proceed to Question 27
NO Please go to Question 34 on page 19

27. Thinking specifically about **apples,** how often do you purchase **apples?**

[Please circle ONE answer only]

1. Everyday
2. 2 – 3 times per week
3. Once a week
4. Once every 2 weeks
5. Once a month
6. Others: ……..[please specify]

28. Thinking specifically about **apples,** what criteria do you use in your decision to purchase fresh apples from retail outlets?

a) …….
b) …….
c) …….
d) …….
e) …….

29. With regard to **apples,** how important are each of the following criteria in your decision to purchase where 1 is “Not at all important” and 6 is “Very important”,

	Not at all important					Very important
Skin colour	1	2	3	4	5	6
Size/ shape	1	2	3	4	5	6
Freshness	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Variety	1	2	3	4	5	6
Freedom from blemish and bruise	1	2	3	4	5	6
Freedom from pests and disease	1	2	3	4	5	6
Freedom from chemical residue	1	2	3	4	5	6
Firmness	1	2	3	4	5	6
Waxed	1	2	3	4	5	6
Competitive price	1	2	3	4	5	6
Value for money	1	2	3	4	5	6
Origin of the fruit	1	2	3	4	5	6
Fruit is prepacked	1	2	3	4	5	6
Label or brand	1	2	3	4	5	6
In-store tastings	1	2	3	4	5	6
Availability of product info in store	1	2	3	4	5	6
Newspaper advertising/ catalogues	1	2	3	4	5	6
Organic	1	2	3	4	5	6
Favourable prior purchase	1	2	3	4	5	6

30. Which of the following criteria in Question 29 do you think are related to each of the following desired outcomes? [The same criteria can be used several times]

Desired outcomes	Criteria in Question 29
The food has a good taste.	a) ..... b) ..... c) .....
The food is safe to eat.	a) ..... b) ..... c) .....
The food is healthy and nutritious.	a) ..... b) ..... c) .....
The food represents value for money.	a) ..... b) ..... c) .....
The food has good texture/ mouth feel.	a) ..... b) ..... c) .....
The food has been produced in a way that is good for the environment.	a) ..... b) ..... c) .....
The food has been produce in a way that protects worker welfare.	a) ..... b) ..... c) .....
The food is guaranteed Halal.	a) ..... b) ..... c) .....

31. On a scale of 1 to 6 where 1 is “Not at all important” and 6 is “Very important”, how important are EACH of the following criteria in your decision to purchase fresh **apples**?

	Not at all important					Very important
The food has a good taste.	1	2	3	4	5	6
The food is safe to eat.	1	2	3	4	5	6
The food is healthy and nutritious.	1	2	3	4	5	6
The food represents value for money.	1	2	3	4	5	6
The food has good texture/ mouth feel.	1	2	3	4	5	6
The food has been produced in a way that is good for the environment.	1	2	3	4	5	6
The food has been produce in a way that protects worker welfare.	1	2	3	4	5	6
The food is guaranteed Halal.	1	2	3	4	5	6

32. On average, how often do you feel **unhappy** with the quality of **apples** you have purchased from your preferred retail outlet with regard to the following desired outcomes?

	Never	One in ten times	One in five times	One in four times	One in three times	One in two times	Every time
The food has a good taste.							
The food is safe to eat.							
The food is healthy and nutritious.							
The food represents value for money.							
The food has good texture/ mouth feel.							
The food has been produced in a way that is good for the environment.							
The food has been produce in a way that protects worker welfare.							
The food is guaranteed Halal.							

33. What are the main reasons for your **dissatisfaction** with the quality of the **apples** you have purchased?

a) …….
b) …….
c) …….
d) …….
e) …….

34. When you are **dissatisfied** with the quality of fresh fruit and vegetables you have purchased, what do you do? On a scale of 1 to 6 where 1 is "I disagree a lot" and 6 is "I agree a lot" to what extent do you disagree/ agree with EACH of these statements:

	I disagree a lot					I agree a lot
I am always satisfied with my purchase	1	2	3	4	5	6
I throw them out	1	2	3	4	5	6
I change shops	1	2	3	4	5	6
I inform/ complain to the seller	1	2	3	4	5	6
I return it to the shop	1	2	3	4	5	6
I just eat it/ cook it	1	2	3	4	5	6
I stop buying	1	2	3	4	5	6
I am more selective the next time I buy	1	2	3	4	5	6
I purchase less	1	2	3	4	5	6
I do nothing	1	2	3	4	5	6
I change brands	1	2	3	4	5	6

35. On a scale of 1 to 6 where 1 is "Not at all confident" and 6 is "Very confident", how confident are you that the fresh fruit and vegetables that you consume are safe to eat? [Please circle ONE answer only]

Not at all confident Very confident

1	2	3	4	5	6

36. According to your response in Question 35, what factors lead you to conclude that the fresh fruit and vegetables that you buy are safe or not safe to eat?

a) …….
b) …….
c) …….
d) …….
e) …….

37. How confident are you of the Malaysian food system in terms of managing each of the following, where 1 is “Not at all confident” and 6 is “Very confident”,

	Not at all confident					Very confident
Organically produced food	1	2	3	4	5	6
Genetically modified fruits and vegetables	1	2	3	4	5	6
Chemical residues	1	2	3	4	5	6
Fair trade	1	2	3	4	5	6
Sustainable production	1	2	3	4	5	6
Country of origin	1	2	3	4	5	6
Water pollution	1	2	3	4	5	6
Waste management	1	2	3	4	5	6
Conservation biodiversity	1	2	3	4	5	6
Animal welfare	1	2	3	4	5	6
Recycling packaging	1	2	3	4	5	6
Halal	1	2	3	4	5	6
Hormones, antibiotics and growth promotants	1	2	3	4	5	6
Functional foods/ probiotics	1	2	3	4	5	6
Microbial contamination	1	2	3	4	5	6

38. Have you ever avoided or boycotted a particular food product because you were concerned about food safety?

…….
…….
…….
…….
…….

39. Is your boycott usually on a temporary basis or permanent? What are the reasons for your boycott?

…….
…….
…….
…….
…….

And finally, a few questions about yourself:

40. Gender (Please circle ONE answer only):

1. Male
2. Female

41. Age (Please circle ONE answer only):

1. 18 – 25 years old
2. 26 – 34 years old
3. 35 – 44 years old
4. 45 – 54 years old
5. 55 – 64 years old
6. 65 and above

42. Marital status (Please circle ONE answer only):

1. Single
2. Married
3. Divorced/ widowed
4. Others: ……[Please specify]

43. Education level (Please circle ONE answer only):

1. Primary school
2. Secondary school
3. Diploma
4. First degree/ professional certificate
5. Postgraduate

44. Occupation: ……[Please specify]

45. Race (Please circle ONE answer only):

1. Malay
2. Chinese
3. Indian
4. Others:……[Please specify]

46. Including yourself, how many people live in your household? _____ people

47. Do you have any children under 18 living in your household? (Please circle ONE answer only):

1. Yes Proceed to Question 48
2. No Please go to Question 49

48.How many?

☐	Children aged less than 5 years old: _____ people.
☐	Children aged between 6 – 12 years old: _____ people.
☐	Teenagers aged between 13 – 17 years old: _____ people.

49.Your postcode area: …….[Please specify]

50. Your monthly income (for single); Your combined income (for married); Your spouse's income (for non-working individuals):

(Please circle ONE answer only):

1. Less than RM1,500
2. RM1,501 – RM3,000
3. RM3,001 – RM4,500
4. RM4,501 – RM6,000
5. RM6,001 – RM7,500
6. RM7,501 – RM9,000
7. RM9,001 and above.

Thank you for your kind response.