

CRITICAL SUCCESS FACTOR FOR SUSTAINABLE FROZEN FOOD

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ABSTRACT

Industrial production of frozen food is the food industries that develop rapidly and it is not something new to consumers in Malaysia. Frozen food industry has captured the hearts of consumers to various products offered in the market nowadays. In view of that, this study analyses the critical success factors for sustainable frozen food industry. In this study there are four factors related in critical success sustainable frozen food industry such as food security. Therefore frozen food manufacture must make sure that their food was safe and clean to customer use, this issue always happen in frozen food industrial. The research design has been done with the technique qualitative and quantitative. Besides using a survey to gather customer perceptions, this research also employs key personnel perspectives into the analysis. It is expected that the findings could contribute towards greater understanding in view of frozen food industry. This research is also expected to provide good insights on managerial applications.

Keywords: Frozen food, Critical Success Factor, Sustainable

INTRODUCTION

Frozen foods have made significant gains in saving energy, reducing greenhouse gas emissions and improve production efficiency. The principles for the development of sustainable food systems have been determined by several cross-government reports including Food Matters and Food 2030 (UK Cabinet Office Strategy Unit. 2008, Defra. 2010). Sustainability, a core principle for global change, stands as the means of meeting the needs of the present generation without compromising the ability of future generation to meet their own needs (World Commission on Environment and Development, 1987). (Crittenden, Ferrell and Pinney, 2001) sustainability has also been defined in general as consumption that can continue indefinitely without the degradation of natural, physical, human and intellectual.

Frozen food is the food that has been subjected to product of the food preservation process and rapid freezing and it kept frozen until used. Frozen food products have variety of product to offer for consumer. Frozen food need kept below -9.5°C to prevent the growth of microorganisms, which helps to slow down the process of decomposition and which in turn helps to keep the food for longer time period.

During World War II a few companies had already produce frozen food, and largely because food rationing and a shortage of canned goods tempted consumers to try whatever was available. And at the end of the war there were 45 companies in the field, and as price controls were gradually removed by the Office of Price Administration (OPA) beginning in May 1946, the number of frozen food producers almost double. After World War II, the staff of the Western Regional Research Centre conducted complex and comprehensive investigation of frozen foods, focusing on how time and temperature can affected their stability and quality. Frozen food can be given new relevance in people's lives by addressing a broadening set of need and meeting new demand for tailored products.

Transparency Market Research has launched a new market report titled "Frozen Food Market-Global Industry Analysis, Size, Share, Growth, Trends and Forecast, 2013 - 2019," according to the which the demand for frozen food was valued at USD 224.74 billion in 2012 is expected to reach USD 293.75 billion by 2019, growing at a CAGR of 3.9% from 2013 to 2019. Frozen foods have been providing American consumers with convenient, affordable and healthy food and meal options since 1930 when, Clarence Birdseye's first line of foods first hit grocery stores. According to America Frozen Food Institute (AFFI), the frozen Food and beverage business plays a significant role in US economy. Information (AFFI) shows the frozen food products in this classification had a market value (sales) of over than \$32 billion in 2012 (Marketline, 2013). And on 2015, for the 52 weeks ending 14 June frozen food sales were \$53 billion. (Frozen & Refrigerated Buyer August 2015).

Malaysia has the food industry, which consists of a variety of foods. Malaysian Investment Development Authority was stated Malaysia remains a net importer of food in 2011 (RM34.5 billion). Malaysia remains a net importer of food. In 2010, Malaysia's exports of food products amounted to RM18.2 billion, while imports total RM30.3 billion. In Malaysia, the development of the food industry is one of the contributors to economic growth. Industrial production of frozen food is the food industries that develop rapidly and it is not something new to consumers in Malaysia. Frozen food industry has captured the hearts of consumers to various products offered in the market nowadays.

Overview of the Industry

In this research, we studied the success factors in ensuring the success for sustainable frozen food. Critical success factors are a limited number of key variables or conditions which has a major impact on how successful and effective organization fulfill any of the mission or a strategic goals or objectives. The successful factor for sustainable frozen food began over a half century ago and the rapid growth of sales since that time reflects consumer satisfaction in the high quality of products, year-found availability and general convenience in product use. Every year the consumer of frozen food product always increases and automatically product sold of each year are also will increases. In fact of that more new products are introduced to swell the total sales. The global market for frozen food witnessed growth due to the growing demand for faster-to-prepare food and new products launches in the market. The quality of frozen foods depends fundamentally on the quality of raw materials used and product manufacture but it can be jeopardized by failure to maintain product temperature at a suitable low level in any part of the cold chain, including storage, transports, distribution and display in retail or by faulty inventory control at all levels that would allow product to be retained for unduly long periods in the cold chain.

Frozen food is an alternative to fresh, canned and cooked foods. It is tone of the most dynamic and largest sectors of the food industry.

Research Objective

The aim of this study is generally to study the critical success factor for sustainable frozen food. Specifically the study aims to:

- i. To investigate the variable that influence the critical success sustainable of frozen food
- ii. To examines the demand towards frozen food (trends and use of frozen food)
- iii. To identify the factors that influence customers choose frozen food
- iv. To study the marketing performance of the frozen food

PROBLEM STATEMENT

Frozen Food was not something new in Malaysia. In business scope, to become success in for sustainable frozen food is not something easy. To manage demand from customers was not something easy. Every year demand from customer always changes and it's show instability. In innovation of entrepreneurship, this research will test the connection between frozen food market orientation and innovativeness. According Hansen (2006) define innovation adoption of a new ideas, processes product, or service that are intended to increase value to the customer and contribute to the performance and effectiveness of the company.

Demand from retailer or customer can be effect to make business become sustainable. Services that companies provide must can satisfy customer demand to make company become sustainable. Besides focus on demand food security also can be one of the factor critical successes for sustainable in frozen food. Food security is a challenge confronting all nations around the globe. Declaration of human rights which recognized that 'Everyone has the right to a standard living adequate for their health and well-being of the United Nations Food and Agriculture Organization showed that globally there were roughly 900 million people undernourished (UNFAO, 2012) and food security wan an issue that was here to stay.

LITERATURE REVIEW

In this research, we find out there are for factors that influence critical success factor sustainable in frozen food which is performance of marketing, customer demand, service and innovation and food security. In term of food security it also include about the hygiene of the frozen food product. The most common used sustainable definition was defined by the Brundtland report in 1987, who documented the sustainable development definition as: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Frozen food is a food preservation process in which water inside cells crystallizes and immobilizes other molecules, suspending chemical activity (McGee, 2004). By immobilizing food liquid water in a solid ice crystal, freezing stops all biological processes and thus extend the storage life of food. Freezing can prevent the spoilage of food by preventing the action of microorganisms and enzymes. Deterioration is fast after the dilution, because the organism re-invaded the cells damaged by the ice crystals. Frozen food is always there; In the early 1900s commercially frozen technology had just created.

Development of food industry is one of the main contributors to the economic growth. Sustainable productions of frozen food provide nutritious meals to the consumer in ways that are simultaneously support the improvement of economic performance, environmental and

social. Researching the market is important in understanding the consumer and their needs. Staking the belief in the consumer's rights to quality and affordability and delivering a consistent offering that satisfies needs. There is a belief that engaging the customer involves keeping the customer interested.

The best businesses carefully cultivate their own positive culture, as Andrew McMillan of Charteris explains Customer focus is an essential part of any successful business. And that focus has to be integral to the culture of the business, not bolted on. Defining that culture is a key step in bringing it to life. And also managing local suppliers through establishing sustainable long-term commitments while efficiently delivering the final product to the customer is also prove to be one of the factors. Performance means the yield and the quality obtained (achieved) in carrying out a task and performance.

According to *Kamus Dewan* marketing is often associated with selling (*selling*) because most oriented company to convert all of them into production money. Marketing is the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create exchanges that satisfy individual objectives and the organization. It is a comprehensive business system and formed to design, deliver, pricing, promoting and distribute products and services for the mass market as well meet the objectives of the company (Sazelin Arif).

Customers demand means the one who have the willingness and ability to pay a price for goods or services. (Levis and Papageorgiou, 2005) customer demand is the agreement of competitive strategy, benefit sharing and risk sharing between buyers and sellers. According to Tsai and Chen (2010) believes customer demand is that for the same objectives different consumers invest related sources which mainly time and money, to make efforts to reach product objectives quality and quantity steted by themselves. Customer means is the recipient of good, services, product or idea, obtained from a seller, vendor or supplier for a monetary or other valuable consideration. According to Babakus, Yava and Ashil (2009), customer satisfaction and human loyalty are two factors of measuring customer demand.

Based on Wikipedia, the free encyclopedia (2013), service means a job done by an individual or group of individuals within the organization who contribute benefits to others (without selling goods or products). Services include contributing energy, skills, expertise and experience can benefit other people or customers. Generally, services in the frozen food industry offers booking services and direct delivery to their hardcore customers and become a leading supplier to the customer. Employers should assess the frozen food, make improvements and assess each of their services so that users are always satisfied. Challenge related to the services offered by operators is one factor that influences the success of the frozen food industry nowadays.

Innovation refers to modifying an object or project undertaken aimed at improving the performance of the individual or organization. Based on the innovation front, according to Mohamad Nordin (FAMA, 2007), frozen food operators should have the initiative to implement certain innovations to achieve product perfection to be sold at its optimum. Most of the production of frozen food products is problematic in terms of packaging although the product is of high quality. Therefore, employers need to innovate to ensure their products are safe, not broken and looks attractive in terms of packaging.

Food security refers to the handling, preparation and storage of food in ways that are safer for the purpose of avoiding those foods from being contaminated and to prevent foodborne illness. It, include some routine must be followed to prevent food poisoning. One step

towards food security is food labelling, food hygiene, control of additives in food, the use of pesticides, biotechnology and basic guidelines for the management of import and export certifications for food and feed.

The basic thing that should be given priority in ensuring the frozen food last longer this continues the cleanliness of raw materials. Clean raw material can guarantee the product's shelf life lasts. In addition, sanitation workers and the surrounding area is also a safety factor of food hygiene. Clean area and clean the operator can prevent or hinder the growth of organisms which can affect directly to the frozen products become damaged. Inventory storage area or need to be maintained and the temperature is regulated properly because *Listeria monocytogenes* can grow well at temperatures between 30 ° C to 37 ° C and can multiply better than all other types of bacteria in the refrigerator temperature (safe food 2014, *Keselamatan dan Kualiti makanan Kementerian Kesihatan Malaysia*).

METHODOLOGY

This studies produce with quantitative path via desktop review and a survey of undergraduate students in UUM (100 students). The data collection exercise was done in 2 weeks within the month of October 2015. The analysis was done with the assistance of SPSS Version 16.0 package.

FINDINGS

Demographic Profiles

To complete our studies we choose randomly 100 respondents who know about frozen food. Our respondent is student UUM who comes from different school. Based on our research from 100 respondents, 64% from them are female and 36% is male, it show in figure 1 below.

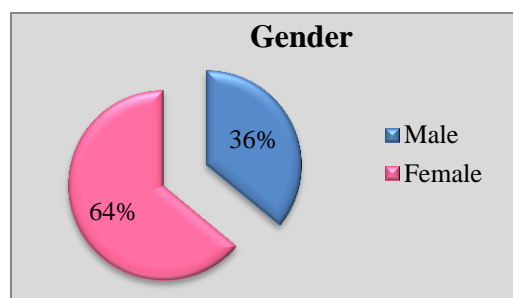


Figure 1

Awareness

From this research we can find out the frequency of our respondent will use frozen food in one month. The result that we get shows by the bar chart below (Figure 2). 37 person of respondent will use one time frozen food in one month, 35 person of them will use two times and rest of them (28 person) is others. Others mean whether they will use more than two times or never use in one month.

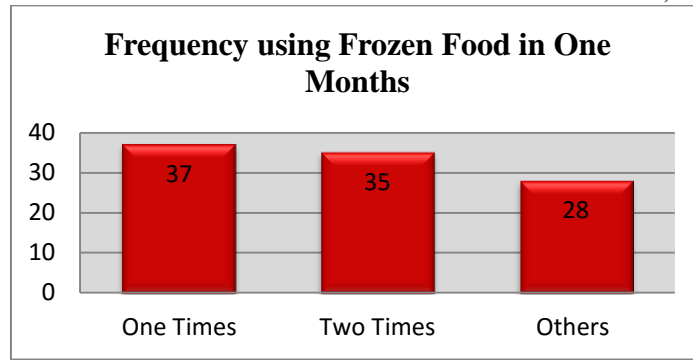


Figure 2

Besides that, we also make analysis the frequency of respondents will use frozen food by gender. By the result we can see the different between them using frozen food in one month. The result shows in figure 2 (a).

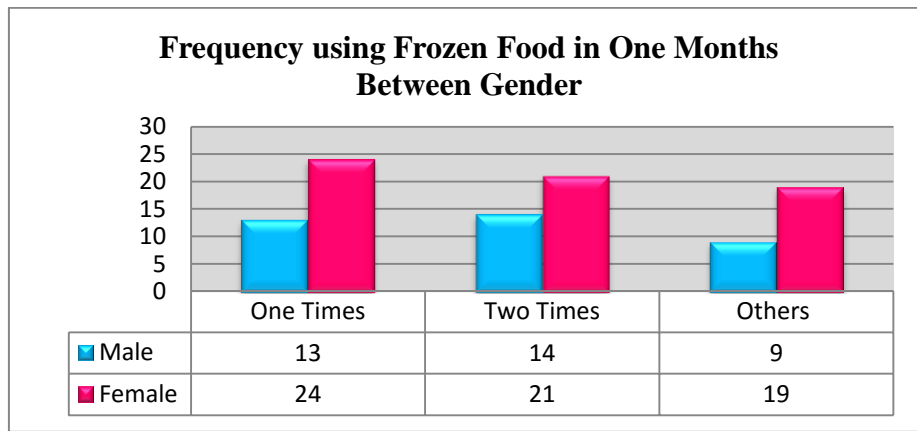


Figure 2 (a)

Factors that Influence Consumption of Frozen Food

In these studies, we make survey the factor that cause consumption chooses frozen food and the result shows by bar chart (figure 3) below. From the result we can see that the highest factor consumption use frozen food is because it easy to use and can save time.

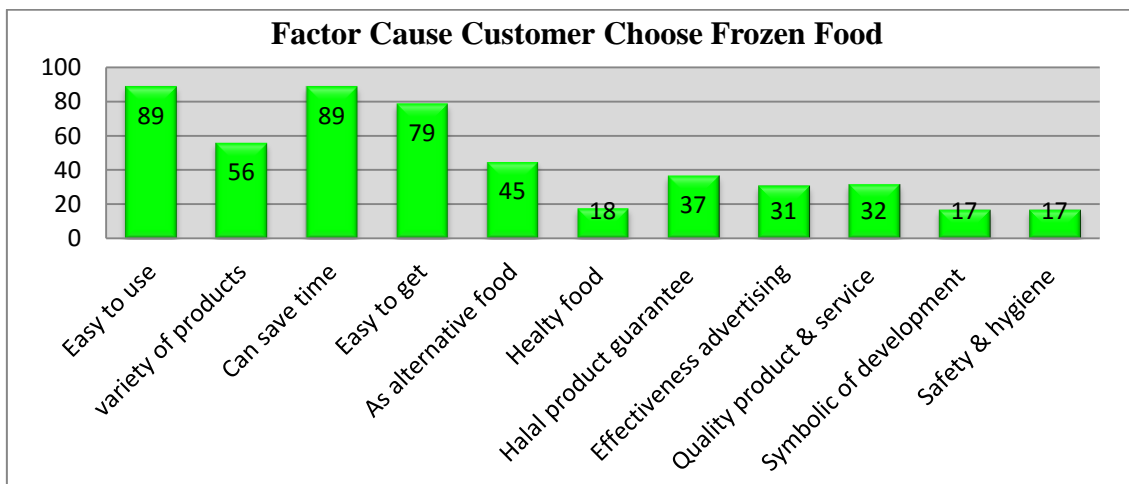


Figure 3

From the figure 3 (a) and below we can see the different result between male and female about the factor cause they choose frozen food. From the result whether consumption male or female the highest factor they use frozen food because it easy to use and can save time. Base on the figure, the result shows that the factor cause consumption chooses frozen food between this two gender is almost same.

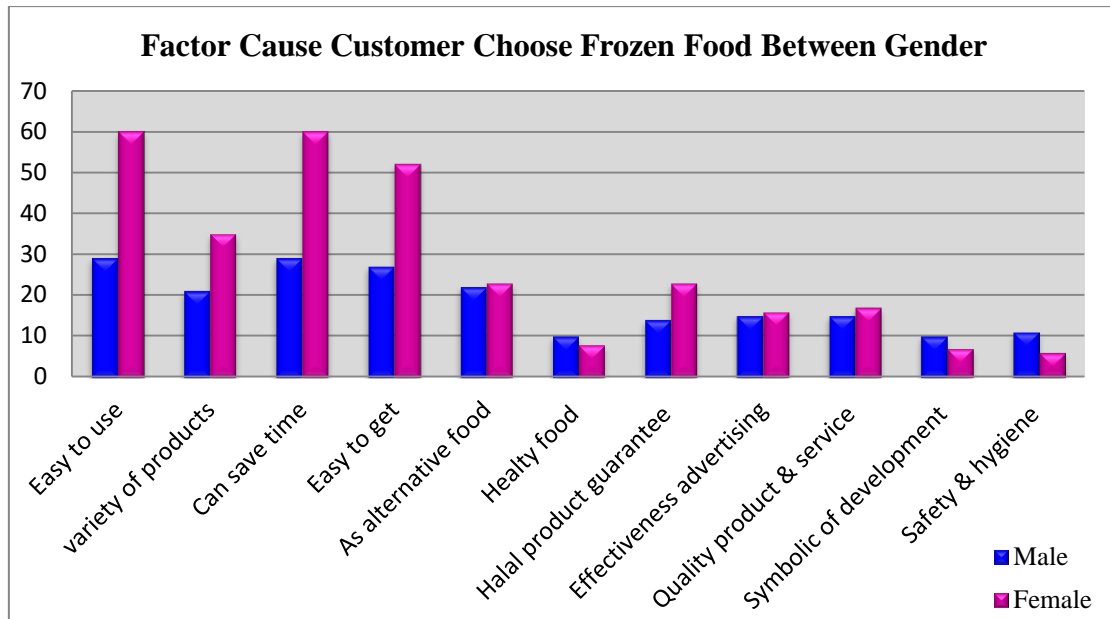


Figure 3(a)

Critical Success Factor of Frozen Food

At the end of these studies we can find out that from the four variable factors that that we state which factor that give the most influence factor for critical success frozen food. Based on data collection below is the mean score from the each factor (figure 4) and the highest result show that the marketing performance as critical success factor sustainable of frozen food.

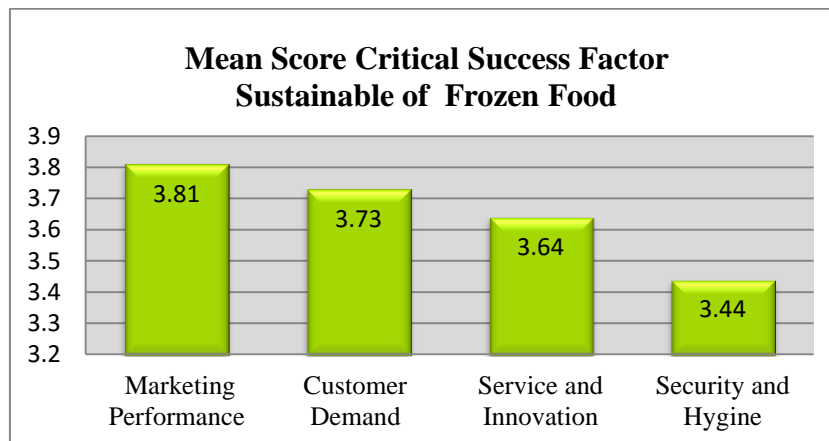


Figure 4

From the figure 4 (a) below, for male result show that customer demand as the critical success factor sustainable of frozen food and its contracts with female. For female the results show performance of marketing as the critical success factor of frozen food. The whole result for mean score critical success factor between gander show in figure 4 (a).

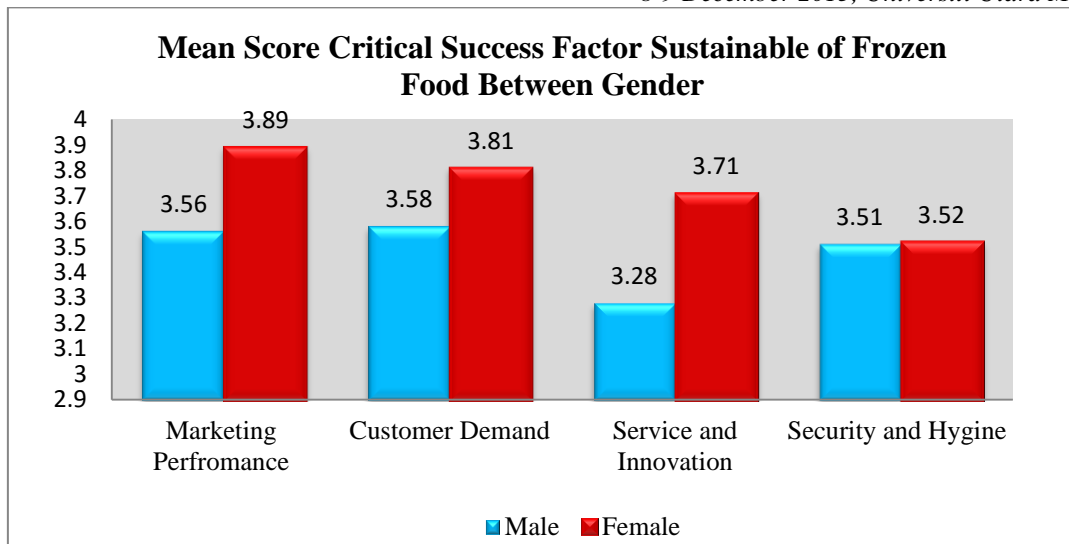


Figure 4 (a)

CONCLUSION

The critical success factor sustainable for frozen food area can be generalized in 4 criteria which is marketing performance, customer demand, service and innovation and the last one security and hygiene of food. Performance of marketing is the main factor that influence the critical success for sustainable frozen food, followed service and innovation, customer demand and food security and hygiene is the last factors.

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