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# **What is preventing e-commerce from reaching its full potential?**

**An investigation into trust as a barrier for the  
adoption of B2C e-commerce in the United Kingdom**

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**By  
Sarah Malone**

**A Doctoral Thesis, submitted in partial  
requirements for the award of Doctor of  
Philosophy degree of Loughborough University**

**February 2008**



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## ABSTRACT

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Although electronic commerce has seen considerable growth in recent years, usage figures suggest that U.K consumers are still hesitant to make the switch to online shopping.

This study initially reviewed the literatures on trust, Internet security, consumer purchasing behaviour and electronic commerce, and then combined the literature review findings with initial results obtained from a pilot study, and a model identifying the factors that affect consumers' perceived trustworthiness of websites when making purchasing decisions on the Internet was created. The model was then tested by means of a consumer perception survey that used a novel quantitative survey instrument to investigate current consumer perceptions of e-commerce, from the perspective of both Internet and Non Internet users, and determined the main barrier to business to consumer (B2C) electronic commerce as identified by the potential consumers themselves.

These quantitative findings were then used to further develop the model of trust, encompassing all the potential factors that the research identified could impact on a consumer's perceived level of trust in a website, thus ultimately affecting their decision to purchase. This model was then tested through further qualitative research that incorporated observational studies to test consumer reactions to an online shopping scenario, using a special selection of web sites that should have (based on the model) a positive or negative influence on consumers' trust.

Although the research design was qualitative in nature, a triangulation approach was adopted to ensure that the information generated was highly relevant and directly applicable to the creation of a model of trust. The model was revised, with the final

version named the Model of Factors Affecting Consumer Trust Online (M.O.F.A.C.T.O). The implications of the model and recommendations for further research are discussed.

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## CHAPTER 1

### INTRODUCTION

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E commerce has been defined by the U.K government as the “buying and selling of goods and services over electronic networks, whether between businesses or between businesses and consumers” (Simpson & Docherty 2004)

Since online trading commenced in 1994, it has been hailed by the retail industry as a revolution in how they do business. Yet today it is still perceived to have not achieved its full potential and the usage figures, although increasing, do not match the levels of yearly growth in comparison to the reported retail spending figures. UK online spending figures, published by Verdict Research in June 2007, reported a growth of one third in 2006 with online sales totalling just over £10 billion (AxisFirst 2007). Predictions now estimate that by 2011 online spending will reach £28 billion, which although represents a significant increase, it will still only be the equivalent of 8.9% of retail spending (AxisFirst 2007).

Although there have been many success stories, such as the established e-tailer Amazon, consumers are seemingly still reluctant to make the transition to online shopping. This has been both a surprise and a worry to many organisations that have invested in a web presence, as the cost benefits to them of trading online are considerable. The U.K government objective to be the “world’s best environment for electronic trading by the end of 2002” (Sugianto & Sendaja 2000, p.211), as published in the White Paper *Our competitive future: building the knowledge driven economy* in December 1998, also increased the initial pressure on UK businesses to increase their online sales.

This prevention of e-commerce reaching its full potential has been an issue of great debate, with many research studies offering differing views as to what the main barrier for e-commerce is to consumers. In January 1999 the Information Technology Association of America (I.T.A.A) conducted in-depth personal interviews with 25 Information Resource Management officials, including CIOs, Deputy CIOs and IRM Directors, representing 19 federal agencies. The findings were published in the *Beyond 2000: Reality or Mirage? Report* which identified that 62% of the I.T executives interviewed believed that trust was the main barrier to e-commerce at that time (I.T.A.A 1999).

Technological advances in recent years have seen organisations adopt new security measures such as firewalls and encryption in recognition of the need to offer reassurance to the consumers that they can trust online businesses with their personal information and that online shopping is safe. These initiatives were strengthened when high street banks and credit card companies began offering online fraud protection to their customers, promising full money back guarantees on items when purchased online. Findings from a later survey conducted in 2001 by NFO WorldGroup highlighted that security was still an issue for consumers, with 49% of the 1,212 respondents stating that fears leading to the misuse of their personal information would limit their online shopping to some extent and 5.6% claimed they would not buy at all online due to their security concerns (Percival-Straunik 2001, p.1).

Trust is therefore identified as an important problem to be faced by e-businesses and to ensure that the consumers purchase online, the main emphasis must be on reassuring consumers that their details are safe and confidential. When shopping

online, the default payment option is credit and debit cards. Unlike in physical trading, where the consumer hands over cash or signs a credit card invoice, and so is present to watch the transaction being processed, the consumer has to manually enter their details and the goods are usually received by post within a few days, making the transaction process validated by trust. This is displayed not only by the consumer but also by the business, as they have to determine that the consumer has both the credit to purchase the goods and is who they claim to be.

The issue of trust is therefore established as being imperative in the online world. This research aims to gain a better understanding of consumers' perception of e-commerce today and how those beliefs have been formed through investigating consumers' current attitudes to e-commerce; with a specific focus on the barriers consumers themselves determine as being the main deterrents to online purchasing.

A key area for debate is that with all the technological advances is there still a real security threat to consumers, or is it in fact a perceived fear by the consumers created from a lack of knowledge of how online transactions work? If consumers had more information about this new technology and how online payments are processed, could greater understanding remove some of the fear and reassure consumers contemplating purchasing online? This is why determining how consumers currently view e-commerce and how those perceptions have been created is fundamental to the research question "What is preventing e-commerce from reaching its full potential?".



### **1.1 Aims and Objectives**

The main aim of the research was to establish and understand the role of consumer trust as a barrier to the expansion of B2C e-commerce in the United Kingdom. Current consumer perceptions of e-commerce will be determined, with research focusing on the relationship between consumers' trust concerns and their willingness to purchase online.

This research aimed to gain a better understanding on consumers' perception of e-commerce today and how those beliefs have been formed through investigating attitudes to e-commerce; there was an emphasis on the barriers consumers themselves determine as being the main deterrents to online purchasing.

This knowledge was then used to develop a model of the information needed by consumers to overcome the barrier of trust, and identify possible factors that may influence consumers' purchasing decisions. The model was then tested through observational studies and then used to make recommendations on possible ways to overcome the barriers.

### **Objectives**

The objectives of the research were:

- To review the literatures of trust, Internet security techniques, consumer purchasing behaviour and of information needs
- To build a model of the factors that affect consumers' perceived trustworthiness of websites when making purchasing decisions on the Internet
- To test the model by means of a consumer perception survey

- To refine the model, and then use observational studies to test consumer reactions to an online shopping scenario, using a special selection of web sites that should have (based on the model) a positive or negative affect on consumers' trust.
- To draw conclusions and make recommendations

### **Hypotheses**

The following hypotheses will be tested through the various methods of research.

Hypothesis 1 – That a lack of consumer trust is inhibiting the expansion of e-commerce.

Hypothesis 2 – That information provided by the organisation is a key component to the development of trust, therefore improved information and knowledge flows will help combat the problem.

## **1.2 Structure of the Thesis**

This thesis summarises the four years of study and is comprised of ten chapters.

The chapters are briefly summarised below.

Chapter 1: Introduction – briefly outlines the research problem and identifies the aims and objectives of the study.

Chapter 2: Literature Review – brings together other relevant research to date and evaluates its discoveries and impacts. Trust models are identified and compared, with focus on areas for improvement.

Chapter 3: Methodology – evaluates the various methods of data collection available and identifies the reasons behind the methods selected as most relevant to this research.

Chapter 4: Pilot Study – an overview of the initial pilot study that took place before commencing the quantitative research is presented. The results are discussed and their influence on the creation of both the survey instrument and the first trust model design is outlined.

Chapter 5: Quantitative Research - outlines how the quantitative data was collected making the research replicable.

Chapter 6: Quantitative Results - presents the findings from the quantitative research. The results are discussed and analysed for patterns and relationships, and conclusions drawn. The results from the statistical analysis are also presented and evaluated.

Chapter 7: Trust Model Part 1 – outlines the initial model design and how the findings from the quantitative research were then used to refine the model.

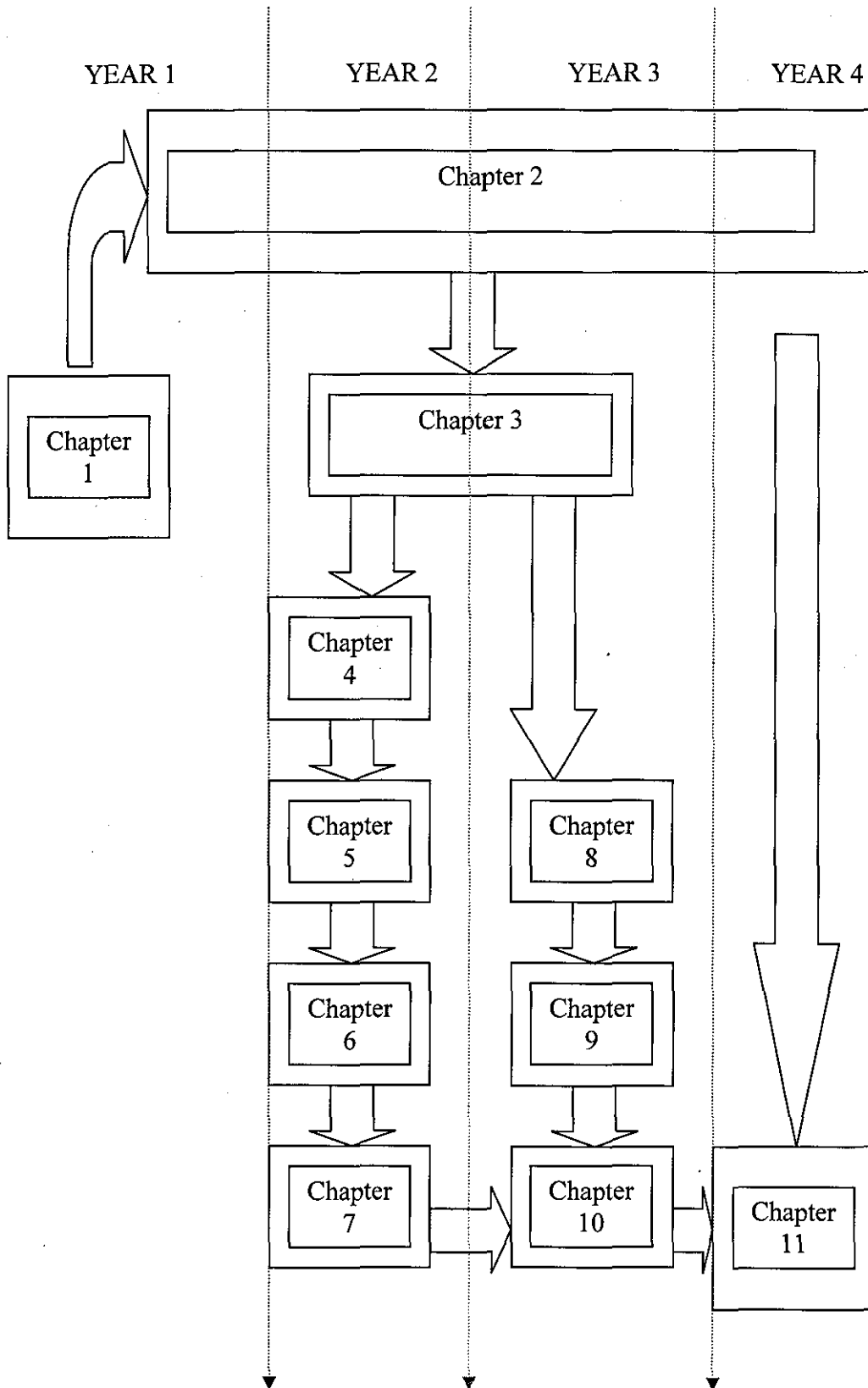
Chapter 8: Qualitative Research - outlines how the qualitative data was collected making the research replicable.

Chapter 9: Qualitative Results – presents the findings from the qualitative research. The results are discussed and analysed for patterns and relationships, and conclusions drawn.

Chapter 10: Trust Model – outlines how the findings from the qualitative research were then used to refine the model and ultimately create the final version. This is then presented and discussed.

Chapter 11: Conclusions and Recommendations – draws together all the findings from the research and conclusions are drawn from these results. This chapter not only looks back at what has been discovered, but also considers what further research is needed.

A visual representation of the thesis structure, illustrating the flow of the chapters, is presented below.



**CHAPTER 2****LITERATURE REVIEW**

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One of the most important technological advances in recent years, in terms of impact on everyday life, has been the adoption of the Internet. The Internet started out as a place for information to be transferred amongst scholars. However, it was not long before businesses realised the potential for commercial use and online shopping was introduced in 1994. The term e-commerce was later adopted and both businesses and consumers commonly use this term to refer to the online shopping process. Percival-Straunik defined e-commerce as “the buying and selling of goods and services on the Internet” (Percival-Straunik 2001, p.16). The term e-business was also introduced by Percival-Straunik to describe the “broader process of how the Internet is revolutionising the way companies do business and relate to their customers” (Percival-Straunik 2001, p.16).

There are two main types of e-commerce, business to business (B2B) and business to consumer (B2C). However, online auctions and marketplaces such as Ebay have created two other forms of e-commerce, consumer to business (C2B) and consumer to consumer (C2C). As the bulk of the trade on the Internet is currently conducted between businesses, there has been much considerable interest by retail organisations in recent years to the lack of adoption of business to consumer trading.

**2.1 IDENTIFICATION OF THE PROBLEM**

In 1999, the “dot com” revolution saw many businesses rush online and open e-commerce websites in the anticipation that there was soon to be a major shift in the retail industry to online trading. The reality was that many consumers did not convert

from their established bricks and mortar stores and this resulted in many “dot coms” suffering critical losses and subsequently closing down in the “dot.com bubble bust” of 2001 (Helmore 2001, p.2). The ensuing bad press did not help strengthen consumer perception of e-commerce; it was portrayed by the media as a mere fad and dismissed as such. Fear inducing statistics were also circulated; one of the most publicised was the statistic released in March 2000 by Expedia.com that from November 1999 to February 2000, the company lost between \$4 and \$6 million through fraudulent credit card purchases (Wilson 2009). This negative image of the U.S retail industry at the time acted as a barrier for many U.K retailers who were considering opening an online store. A survey conducted by Docherty in 1999 found that only 10% of retailers in the U.K had established a website, and of those, a mere 3% were enabled for online trading (Docherty et al 1999). However, retailers were seemingly quick to overcome this initial barrier as by comparison figures from the 2004 Information Security Breaches Survey, conducted by the UK Department of Trade and Industry, showed that 73% of respondents claimed to have a transactional website – up from just 13% in the previous version of the same survey two years earlier (Great Britain. Department of Trade and Industry 2004, p.7). This substantial growth implied that the industry believed it had moved on from the earlier security scares, utilising advancements in secure technologies to create an improved defence against online fraud. In reality of course there is still numerous threats to online businesses, with the *UK Retailers Target of Rising Online Fraud website* (2008) highlighting that in a Online Fraud Report report by Cybersource published in 2007, of the 165 retailers that were interviewed 25% of the respondents said that had they suffered the most in actual losses from online fraud in 2006, and that figures had increased by over 10% from the past year (2007), showing that the number of online fraud cases reported is

actually rising every year. The next stage of the literature review therefore was to investigate into the potential threats facing businesses and consumers online today.

One example of a threat to an e-commerce system is Malware. This is a term used to describe worms, virus and other form of malicious software that may affect the operation of service and potentially compromise security (Furnell 2004 p.12). In January 2004 the Mimail virus created more negative press for the e-commerce industry. Unlike the well-publicised MyDoom virus, Mimail was a worm spread by email, which attempted to steal user's credit card information. It did this by displaying a dialog box on infected computers, deceiving the user that it was a form for renewing Windows licences and that their current licence had expired. It then prompted the user to renew the licence and enter their credit card details. This information was then stored in a file and emailed out to several address in its code. The worm then sent itself out to all email addresses stored on the affected computer (Furnell 2004 p.12). This had a considerable effect on the e-commerce industry as, due to the large number of computers affected, word of mouth and media coverage helped create an increased awareness of the virus among consumers, highlighting the potential risk of giving your credit card details online and the real security risks still out there.

Website defacement is an example of a potentially long term damaging threat to an organisations reputation and perceived trustworthiness. As a company website is similar in principle to a shop window, any unauthorised alteration to information presented on the site or general site vandalism, will undoubtedly create a negative impression on potential customers. If a site is seen to be unable to protect its own



information from being accessed and misused, how can it convince customers that any sensitive personal information will be kept safe? (Furnell 2004 p.11)

Not all of the responsibility for security threat vigilance lies with the organisation. Phishing differs from the other threats identified as it tries to trick the consumers themselves into divulging sensitive data, through messages and websites that purport to be from legitimate sources such as banks and online retailers (Furnell 2004 p.11). The number of cases reported has risen considerably in recent years according to the APACS website (2007), which reports a 42% increase in phishing incidents from 2006 to 2007 alone.

In spite of the ever present security threats, some online businesses have been successful in creating a solid trustworthy reputation, such as Amazon and Expedia, and these have been the inspiration for organisations to continue to use e-commerce for B2C, in the hope of being able to make more consumers go online. The advantages for business are such that it is perceived worth the potential risk. By selling their products online businesses can benefit from a substantial reduction in costs. Although an initial investment is required to set up the web site, maintenance costs are relatively low and by removing the middle man, store overheads such as staff costs are reduced. This is reflected in the fact reported by the BBC Webwise website (1998) that an in-store transaction costs the business on average 65p compared to an online transaction cost of 3p. These savings can then be passed onto the consumers through lower prices, which give the company a competitive advantage, or can simply lead to higher profits (Montaldo 2006).

A recognised advantage of e-commerce for organisations is that it offers the potential to turn even a small business into a global organisation. B2C e-commerce dramatically increases sales potential and removes any geographical boundaries, and as a direct link to consumers is set up through the creation of a virtual environment, feedback can easily be obtained from consumers as to any areas of concern. It is suggested that there are some advantages for consumers who shop online, such as convenience, detailed product information, wider product ranges and often more competitive prices. It is therefore on the face of it difficult to understand the relatively low number of consumers that have made purchases online, with previous research suggesting a general agreement that e-commerce has yet to reach its full potential (Kim & Benbasat 2003). Although there has been considerable growth in the UK's Internet shopping market, which is now estimated to be worth more than £42 billion a year by Internet Measurement Research Group (IMRG), (Charlton 2007), this still accounts for less than 20% of the total retail sales in the United Kingdom. The *Growth Slows on Holiday Spending on Plastic Cards in UK* (2008) website reported that the December 2007 spending figures, as published by the UK payments association APACS, showed that although online spending on credit cards over the Christmas period reached £5.4 billion, the figure marks the slowest year on year increase over the same period for four years. This suggests that even today, something is still acting as a barrier for e-commerce, preventing the consumers that are yet to purchase online from switching from their traditional retail shopping environment.

### **2.1.1 SUGGESTED BARRIERS TO E-COMMERCE**

There are numerous factors believed to be preventing consumers from buying online. Accessibility is a fundamental issue. Obviously if consumers do not have the key

requirement for e-commerce, i.e., access to the Internet via a computer, they will be unable to participate in online shopping. Survey findings in 2002 stated that there were over 18 million adults in the U.K that had access to the Internet that had not yet shopped online (Chen *et al.* 2002, p.715). In recent years Internet access figures have risen considerably, with the gradual lowering of broadband costs suggested as being mainly responsible. National statistics data released by the UK government (Office for National Statistics 2007) in August 2007 stated that 11 million UK households, approximately 36%, had Internet access in 2002, compared to the 15 million UK Households, approximately 61%, that had access to the Internet in 2007. If accessibility is in fact one of the main reasons why e-commerce has failed to reach its full potential then the national statistics figures suggest that this is no longer an issue for consideration for the majority of homes in the UK today.

Lack of social interaction is also professed to be a negative aspect of e-commerce (Chen *et al.* 2002, p.716). As shopping is commonly perceived to be a social activity, with people generally requiring advice on their purchases and meeting friends whilst shopping, the aspect of isolation is seen as a major disadvantage to the social interaction rich online shopping experience. In contrast, this may be a potential benefit of e-commerce for some consumers', as it also means the removal of social annoyances associated with the traditional experience, such as queues. Another potential benefit of shopping from a website compared to a traditional store is that websites offer consumer's detailed product information that a sales consultant in a traditional retail outlet may not know, enabling those that do required advice and guidance a specific product to make a more informed purchasing decision. Yet, it has also been suggested that as other aspects of the physical activity of shopping are

removed online such as the inability to actually see, touch, and in the case of clothes, try on the products and this may be considered a potential issue for consumers.

One of the suggested deterrents to online purchasing is the fear of new technology and lack of technical knowledge. As the Internet is a relatively new medium, compared to the traditional activity of high street shopping, many consumers may feel they do not have the required knowledge to make a purchase, and some may even be afraid of the new technology preferring to continue to shop with the established “bricks and mortar” stores. A report from McAfee and the National Cyber Security Alliance (NCSA) published in October 2007 suggests those consumers’ fears when embracing new technologies may not be so misguided. The report identified that of the 81 % of respondents that were found to have a firewall installed on their computer; only 64% had actually turned it on (Patrizio 2007).

Although all the factors discussed above may have an influence on a consumers’ purchasing decision, the literature review found that the most discussed barrier to e-commerce was the issue of consumers’ concerns over security. As credit and debit cards are the default payment option for e-commerce, this is potentially a major factor in the adoption of online shopping. If the consumer does not have complete confidence in the business or trust the transaction to be secure, he or she will refuse to give personal information such as credit card details to the vendor over the Internet, instead choosing to “drop out” of the transaction process, as identified by the Chau et al research findings (Chau et al. 2007, p.180) due to the uncertainty surrounding the safety of their personal financial information.

Uncertainty can take one of two forms. System-dependant uncertainty covers worries about technology errors or security gaps in the information communication system. These can be described as environmental uncertainties as they are beyond the control of any of the actors taking part in the transaction or could not be avoided by any contractual agreements, such as the merchant server being unable to process the order (Grabner-Kraeuter 2002, p.45). In contrast, transaction-specific uncertainty is concerned with the consumer and the quality of products and services offered on the web (Grabner-Kraeuter 2002, p.45). Security concerns online form system-dependant uncertainty as it has been suggested that the main fear for consumers is that their credit card details may be accessed and used fraudulently by outsiders or the actual organisation itself.

According to Camp (Prins 2002, p.13), there are three ways that an individual's card details can be obtained in an unauthorised manner. The information can be copied during transmission by monitoring a communication, accessed during storage by hackers exploiting organisations that still store personal information in systems that are directly linked to the Internet, or it can be obtained and misused by an authorised party (Prins 2002, p.13). McKnight (McKnight & Chervany 2002, p.43) argues that "the reason why trust has a significant impact on end-users' willingness to trade in online environments is because it can help them to deal with uncertainty".

Although figures do suggest that online fraud is increasing (Montaldo 2006), the majority of the credit card details that were used fraudulently online were actually obtained by criminals in the real world (Furnell 2004 p.12), and APACS report that "the proportion relating to data actually stolen from websites is described as "very

low” (Furnell 2004 p.12). This statement was supported by findings from the 2006 Identity Fraud Survey Report (Johannes 2006) released by Javelin Strategy and Research. The report found that in cases where the source of the identity theft was known; only 9 percent were reported to have come from hacking, viruses and phishing. In contrast, a lost or stolen wallet or credit/debit card was the cause of 30% of the incidents. The study also found that over 70% of fraudulent activity is conducted offline via phone or mail. The underlying issue consumers have with the security of online transactions relating to the issue of identity theft therefore could actually be their lack of perceived trust in the technology itself.

## **2.2 THE ISSUE OF TRUST**

Cheskin conducted a detailed *Online trust survey* (1998) in 1998. It concluded, “without trust, development of e-commerce cannot reach its potential”. Trust is a complex, multi faceted concept, and although many have their own concept of what trust signifies, the view considered most relevant is that of Mayer. Mayer defined trust as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that party” (Ford 2002, p.555). This is particularly relevant to e-commerce, as it incorporates the key issue of security concerns and the consumer’s inability to monitor the business and the transaction, as there is no personal interaction involved. Unlike in the real world where the consumer is present for the transaction being processed and takes the purchased goods away with them, in the virtual world, consumers have to hand over their credit card details and then trust the business to honour the agreement and deliver the goods at a later date. However, trust is vitally important not just for the consumers but also for the

organisation, as it must determine that the consumer has the credit to purchase the goods and is indeed the person they are claiming to be. Trust is recognised as being fundamental in all business transactions, negotiations, and change initiatives and consequently is the topic of much research. The focus of much of the literature is different categorisations of trust with authors such as Shapiro, Brewer, Williamson, Zucker and Rotter all believing there are different bases for trust (Ford 2002, p.556). In the text below, all of the popularised theories are presented, applied to e-commerce and evaluated.

### **2.2.1 EVALUATION OF LITERATURE ON TRUST**

Categorisations of trust are seen as being from either a rational or social perspective. The rational perspective focuses on the idea of a calculus of self-interest, in contrast the social perspective of trust centres on a moral duty (Ford 2002, p.558). Trust theories that relate to e-commerce are focused on the rational perspective with a focus on the benefits from shopping online measured against the possible risks. This is summarised by the theory of economics-based trust. Devised by Williamson, this theory claims that trust is derived from a rational decision based on costs and benefits (Ford 2002, p.556). A contrasting theory is proposed by Rotter, who believes trust is personality-based and derived from relationships throughout childhood that contribute to an individual's natural propensity to trust (Ford 2002, p.556). Trust propensity, also referred to as personal disposition to trust, is defined by Ridings et al as a general tendency or inclination in which people show faith or belief in humanity and adopt a trusting stance toward others (Ridings et al 2002, p.274). This notion that a person's experience in life greatly influences their natural disposition to trust, is discussed again in the trust model section, presented later in the chapter.

Shapiro identified three bases for trust as stages in his trust development model. These were deterrence-based, knowledge-based trust and identification-based trust (Ford 2002, p.556). Deterrence-based trust relates to the fear from the threat of punishment if the trust is violated; this is seen as more of a motivator to maintain behavioural consistency than the promise of reward. This is argued to be a form of control rather than trust; nevertheless, some people do demonstrate trust based on the presence of costly sanctions for any opportunistic behaviour. Knowledge-based trust is derived through knowledge of the other party. The information gathered throughout the relationship can be used to the stage where the other party's behaviour can be predicted. This is only achieved over time and requires a relationship to be developed between the consumer and the organisation. Identification-based trust is derived through empathy and a sharing of common values. This requires both parties to identify with each other and feel they can act on each other's behalf as they are working together to achieve a common task.

Jones and George proposed that there were three states of trust that a person went through. These were distrust, conditional trust and unconditional trust (Ford 2002, p.556). Distrust was seen as unwillingness to expose oneself to risk with respect to an individual or organisation they believed to be untrustworthy. Conditional trust is achieved through knowledge and is a state where both parties are willing to transact with each other as long as they behave appropriately and meet expectations. Unconditional trust is likened to Shapiro's identification trust as it is founded on shared beliefs and values, which become the structure of the relationship.

Although all the trust theories take a different approach as to how and why trust is achieved, there is no one particular theory that is correct. Instead, the differing



theories highlight the complexity of trust, each highlighting major factors that need to be addressed when trying to determine what influences consumers' perceptions on the trustworthiness of e-commerce.

Two forms of trust that are related in particular to the subject of e-commerce, and are subsequently considered when discussing possible ways of increasing consumer perception of trustworthiness of a site, are cognition-based and institution-based trust. Brewer (Ford 2002, p.558) states that cognition-based trust is derived from cognitive cues such as first impressions of a website. This highlights the importance of such features as website design, interactivity and ensuring consumers have an exceptional first experience of online shopping. Zucker (Ford 2002, p.559) identifies institution-based trust as trust that reflects the security felt due to guarantees, safety nets and other structures. In relation to e-commerce, this includes such things as online fraud guarantees devised by Visa and MasterCard, and third party assurance schemes that are meant to increase consumer confidence in the trustworthiness of a website. It is argued that as the majority of online transactions are between two parties unfamiliar to each other, third-party trust is of especial importance in the online world. This is supported by the two types of trust defined by Boeyen and Moses direct trust and third-party trust (Boeyen & Moses 2003). Direct trust is defined as a "trust relationship" developed by the two parties themselves, in contrast, third-party trust develops between two parties who might not know each other from before but are willing to trust each other thanks to the contribution of a perceived reliable third party.

Sako (Lane & Bachman 1998, p.217) classified two types of trust that can also be easily applied to e-commerce. Goodwill trust consists of the belief that each party will not take advantage of the other and behave responsibly. Both consumers and businesses involved in economic transactions display goodwill trust. Competence trust is shown by the consumers and defined as trust in the ability of the supplier to fulfil commitments. This is particularly relevant when addressing the concerns over credit card details. Statistics published by Jupiter Research on the *US consumers worry about online privacy* (2002) proposed that online retail sales would have been 24% higher in 2006 if consumers' fears about security and privacy were addressed effectively. The Consumer Privacy Legislative Forum was created in December 2006 and highlighted how the recognition by leading US businesses of the need to reassure potential consumers that their personal data will be secure when shopping online. The forum, launched in January 2008, brought together respected industry giants of Microsoft, Hewlett Packard, Oracle, Google and Ebay to work together in defining national standards for a variety of privacy and security issues that will ultimately be enshrined in US federal law.

A study conducted in 2002 by McKnight and Chervany analysed six constructs of trust to examine how trust elements can affect end-users' behaviour, these were :

- (1) trusting beliefs;
- (2) trusting intention;
- (3) trusting behaviour;
- (4) system trust;
- (5) dispositional trust; and
- (6) situational decision to trust.

From the study findings, they defined trust in relation to three main categories (McKnight & Chervany 2002, p.39), these were:

- i. it is always described as expectancies and beliefs
- ii. it can also be defined as behaviour
- iii. it also consists of affective or cognitive/affective aspects.

McKnight later went on to use the study findings to create his trust building model (McKnight & Chervany 2002, p.57), to illustrate how factors identified above, such as behavioural intentions and trusting beliefs, can have an influence over the consumers' perceived trust in the vendor. This model is presented and discussed further in the next section, along with a critical evaluation of other proposed e-commerce trust models.

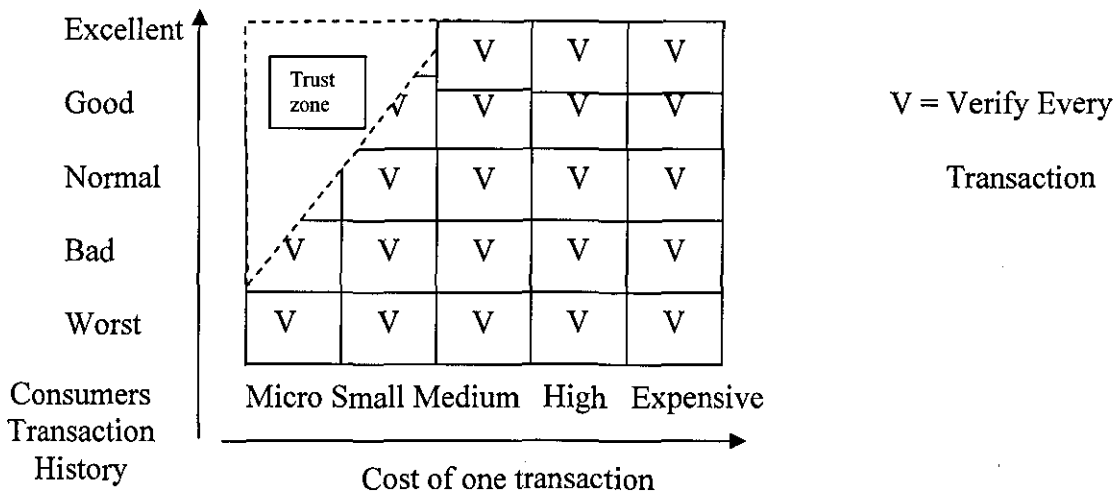
### **2.2.2 TRUST MODELS**

By incorporating the theories behind different bases for trust into a model, it is easy to see how different factors can influence a consumers purchasing decision and the perceived level of trust they have in a website. In recent years, numerous trust models have been developed.

Essin (Gaines 2001, p.176) devised a model based on socio-technical aspects of trust. The model focused on the variables of context, reputation, identity and stake. Although the model was successful in identifying key variables that would affect trust development, Essin did not assign any values to the model and so could not make any measures of the trust values generated by it. In contrast, Reiter and Stubblebine (Gaines 2001, p.176) developed a number of metrics or numerical formulas that they then used to evaluate trust models. Josang (Gaines 2001, p.178), converted trust into a

so-called probability expectation value, which he then applied in formulas previously used in standard probability theory. His findings lead to the development of a number of trust models, in particular the BBK scheme model which extracted trust values based upon positive and negative experiences. However, he stated, “probability could not reflect the conditions of ignorance and uncertainty” ((Gaines 2001, p.178). Trust models can be used for a variety of purposes. Manchala (Manchala 2000, p.39) identified the use of trust models in risk analysis, representing the relationship between trust variables and the level of trust required in a transaction, in a matrix trust model (see figure 1).

Figure 1. Trust Matrix identifying the Trust Zone



This model differs from others reviewed in this section, as it looks at trust from the perspective of the organisation involved in the transaction. The model highlights the organisation’s perceived need for transaction verification, depending upon variables such as the consumers’ transaction history and the value of the purchase. Although it takes an interesting perspective, this model is not suitable for consumer based

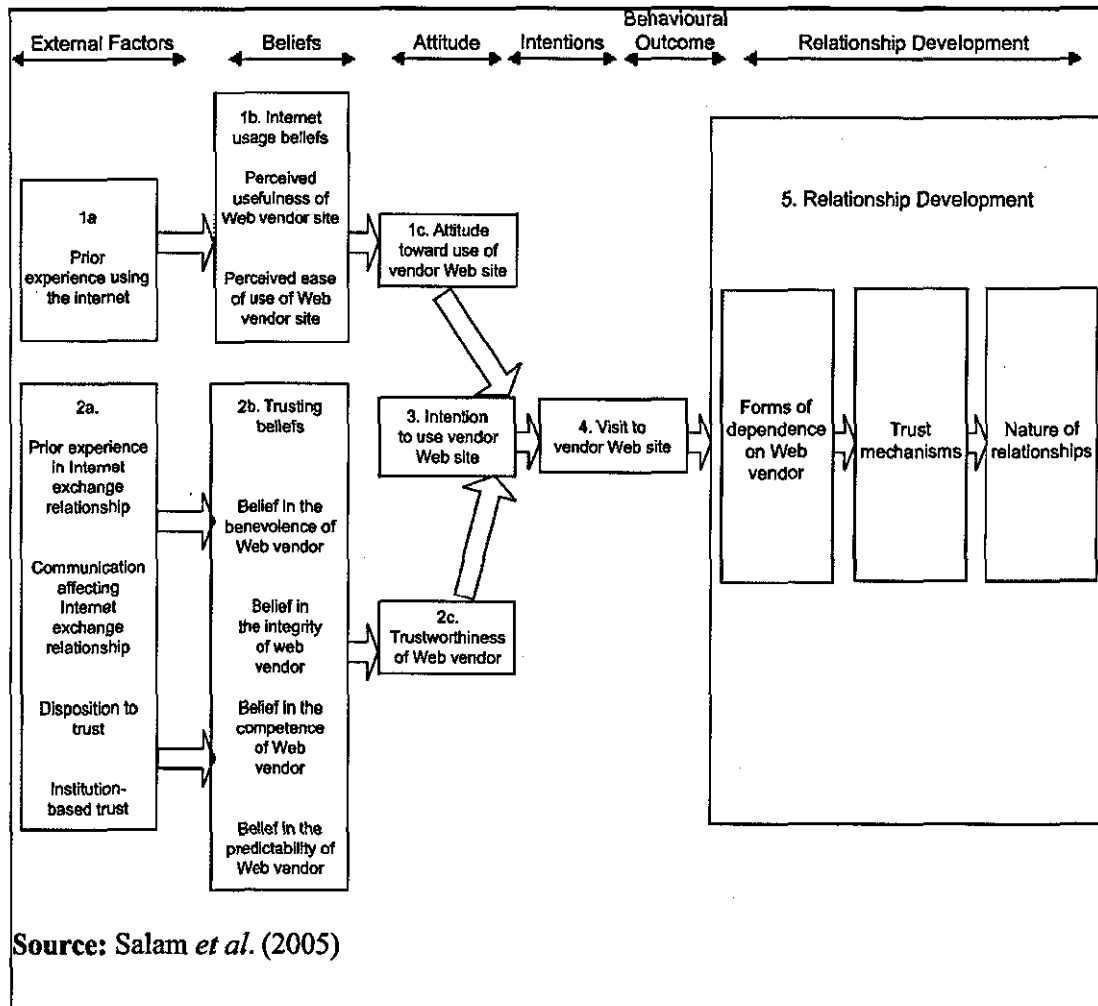
research into e-commerce as it fails to represent all the barriers to e-commerce, instead focusing on verification, which is only one aspect of the issue.

The Technology Acceptance Model (TAM), developed by Davis was considered to be one of the most widely used conceptualisations; to explain how people behave when faced with new technology (Davis *et al* 1989 p. 994). The model proposed that the users' willingness to use or not to use new technology depends on two key factors: perceived usefulness (PU) and perceived ease of use (PEOU). Davis stated that although both factors were critical, perceived usefulness was the most influential determinant affecting online initial trust as a less-functional web site interface can discourage users to engage with it, even if it is easy to use (Davis *et al* 1989 p. 996).

In 2005 Salam *et al.* (Salo & Karjaluoto 2007, p. 609) created a model that that combined trust into TAM (see figure 2). Salam's model identified two major external factors that would influence the end-user's intention to use the vendor's web site (Salo & Karjaluoto 2007, p. 609), and followed a flow chart progression through varying stages before the relationship development phase could be realised. Factor 1 looked at how a user's previous experience using the Internet would shape their Internet using beliefs, which encompassed Davies's identified factors of perceived usefulness and perceived ease of use, which would subsequently affect the user's attitude towards the web site. Factor 2 illustrated how Salam's claim that the users' trusting beliefs are based on the end-users' prior experience in internet exchange relationships, communication affecting internet exchange relationships, disposition to trust and institution-based trust (Salo & Karjaluoto 2007, p. 610). The end-users'

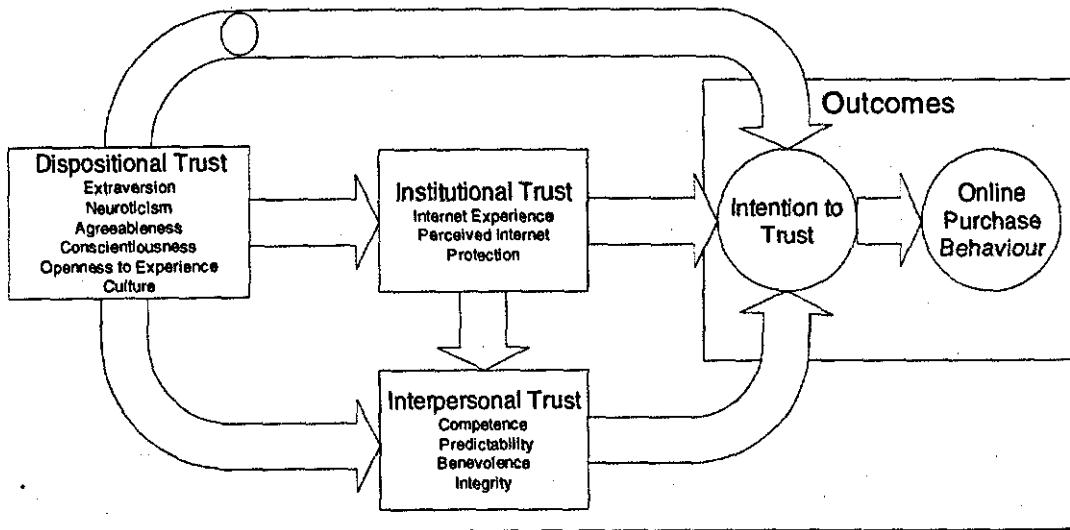
attitude will be formed based on these beliefs, and it will in turn affect the users' intention to use the vendor's web site (Salo & Karjaluoto 2007, p. 610).

Figure 2. Salam TAM Model Revision



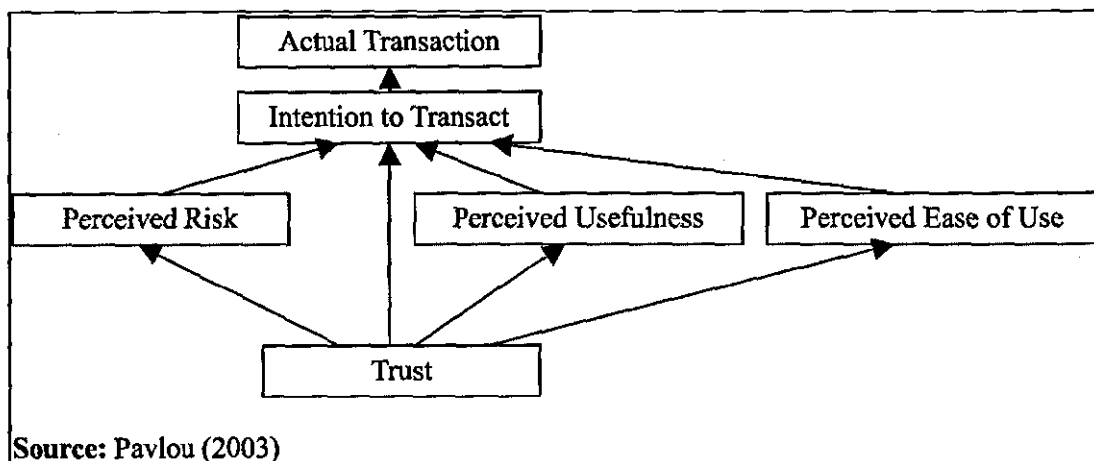
Similarly, the Multi-Dimensional Model, (see figure 3), developed by Tan also looked at how a users intention to trust and subsequent online purchase behaviour, is affected by factors such as their previous Internet experience, underpinned by Institutional Trust and their Disposition to trust (Tan & Sutherland 2004, p.46). Tan claimed that his model was unique at the time of creation as it offered a consumer centric viewpoint (Tan & Sutherland 2004, p.47).

Figure 3. Multi-Dimensional Model



A 2003 study conducted by Pavlou investigated the influence of trust on the factors previously identified in Davies' TAM model; the user's perceived usefulness and perceived ease of use of a website and also identified a third factor for consideration, the user's perceived risk (Pavlou 2003).

Figure 4. Pavlou Model



The study concluded that as the user goes through the various stages in an online transaction, trust reduces the users' perceived risk and increases their perceived

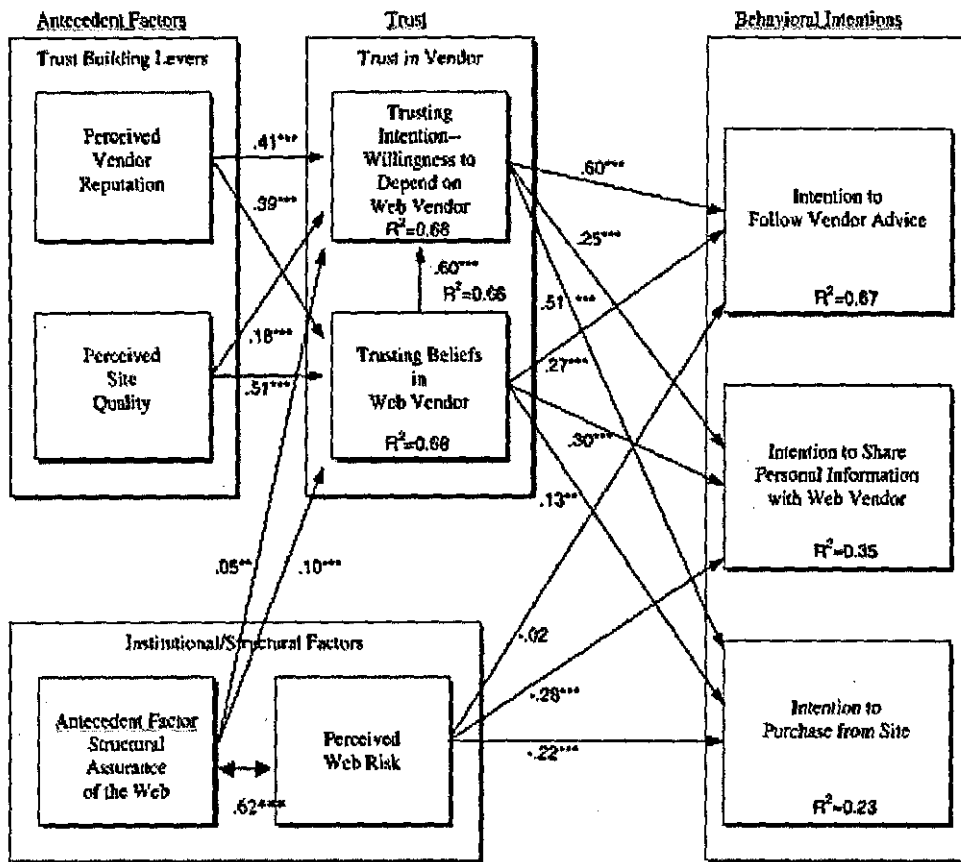
usefulness, ease of use, and intention to transact and a model was created to illustrate the findings (see Figure 4). Although the model included arrows to highlight the relationship between trust and the three main factors, there was no indication if the relationship was positive or negative and this is the major limitation of the model.

McKnight and Choudhury devised a trust building model (see figure 5) that outlined how factors, such as behavioural intentions, antecedent factors and institutional factors all have an influence over the consumers' perceived trust in the vendor (McKnight & Chervany 2002, p. 312). This model directly addresses the key concern of consumers' lack of trust in e-commerce, and tries to investigate how, by determining the level of effect certain variables have over the perceived trustworthiness of a vendor, consumer confidence can be raised. The model incorporates all aspects of consumer perception, from the sites design and first impression created, to the consumers' overall willingness to depend and trusting beliefs. Although a very concise and detailed model, the complexity of its structure makes it difficult to follow and confusing. Therefore the purpose of the model is somewhat lost.

In contrast to this, Corritore's Model of Online Trust, (see figure 6), is so simplified that it offers no depth of information making it essentially unusable. Although it outlines the importance of the consumers perception of such factors as the websites ease of use, credibility and the risk involved, it presents no insight into how these perceptions are formed, or any detail on the external factors that it credits as having an influence on them (Corritore & Kracher 2003, p. 749).



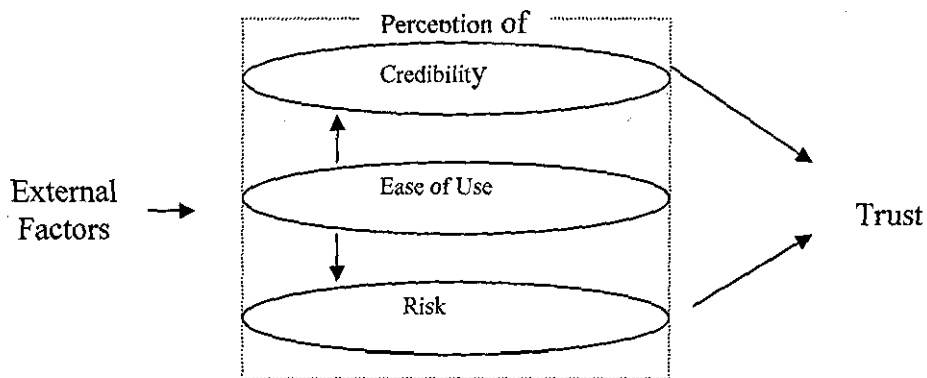
Figure 5. Trust Building Model



RMSEA = 0.054, CFI=.99, GFI=.99, AGFI=.96, NFI=.99, Chi-squared =55.60

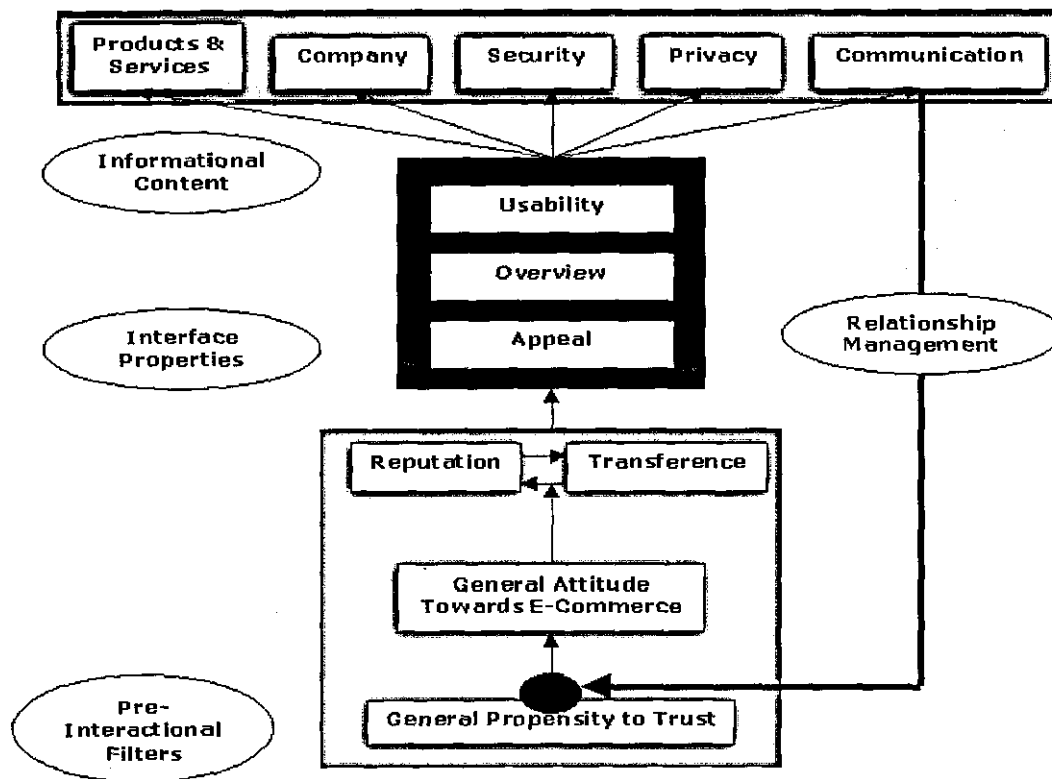
- RMSEA (Root Mean Square Error of Approximation)
- CFI (Comparative Fit Index)
- GFI (Goodness of Fit Index)
- AGFI (Adjusted Goodness of Fit Index)
- NFI (Normed Fit Index)

Figure 6. Corritore's Model of Online Trust



The most accepted trust model for e-commerce is the Model Of Trust for Electronic Commerce, or MoTEC model, (see Figure 7), which has been updated and revised since its formulation by Egger in 1998 (Egger 2000, p.754).

Figure 7 – Revised MoTEC Model



This model is considered superior as it shows all the various factors that are crucial in the development and maintenance of trust. Pre-Interactional Filters are the first dimension, these are factors that can affect people's perceptions before a particular e-commerce system has been accessed and include things like the individuals' general propensity to trust and their attitude to e-commerce. The second dimension is Interface properties. These are the design features of a website such as the usability, dialogue used and the overall professionalism of the site. Informational content refers to the content of the website such as the descriptions of the products for sale,

information on the company such as values, contact information and any policies. The Relationship Management arrow reflects the two phases of trust that need to be distinguished. These are perceived trustworthiness, which refers to the customer decision to trust a vendor for the first time and experienced trustworthiness, that depends on the initial transaction and the level of customer satisfaction achieved. The model is superior to all others reviewed as it can be used by businesses to determine all the potential influences on the consumer's perceived level of trustworthiness for a website. It also offers potential solutions by providing criteria for how to improve a website.

Although there has been a notable increase in the number of trust models developed as a result of numerous e-commerce studies conducted in recent years, a recognised limitation is that a high number of these have focused on one specific element of e-commerce, such as the research model devised by Lian that illustrated the finding that the determinants of user acceptance of online shopping differ according to product or service type offered by an organisation (Lian & Lin 2008, p.63).

### **2.2.3 EVALUATION OF THE TRUST MODELS**

Through evaluating and comparing the models, common factors can be identified and weaknesses determined. Manchala's model is unique as it is only concerned with the risk analysis process from the perspective of the organisation and therefore, cannot be applied to consumer behaviour and so would be inapplicable to the research objectives of this study.

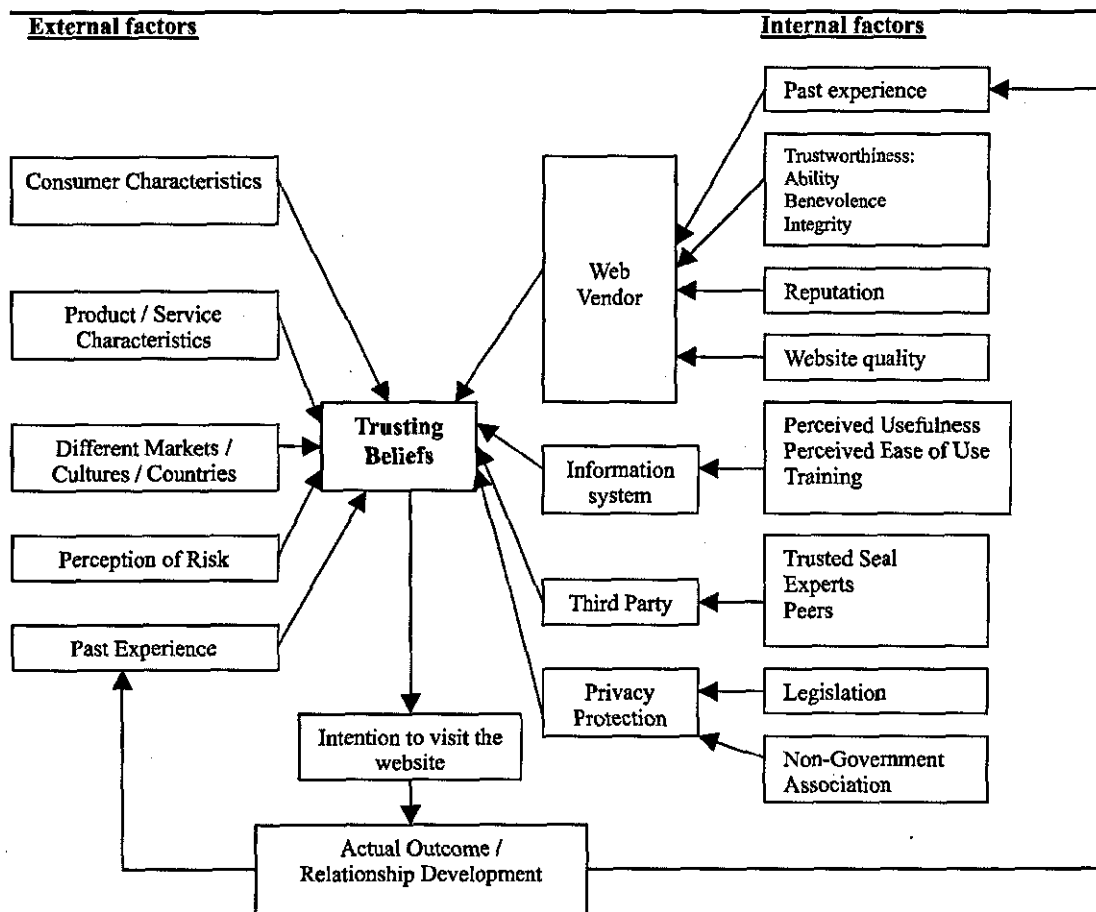
Interestingly, a common element within all of the models is the identification that the design of the website, in particular the aspect of usability, is a key factor for consumers. This is a reflection of the widespread recognition of the TAM model, which was the first model to identify this as a key factor. The influence of website design is detailed further in the McKnight and Egger model's with aspects such as web seal displays and overall professionalism of the site identified as increasing the perceived trustworthiness of the site. This more detailed approach separates the two models from numerous others and offers a richer picture, yet both models have their weaknesses. As previously highlighted the McKnight model has a complex structure that makes it unclear initially to follow. The model also incorporates numerical calculations to the behavioural intentions of the consumer, which fails to address the fact that consumers' intent to purchase may not actually result in a purchase being made. One criticism is that the model does not include any external influences or provide any information how such factors as perceived site quality is determined.

Similarly, Eggers model takes an overview of the problem and although it clearly shows how all factors are related to and influence each other; again external influences are not included. Salam's revision of the TAM model does recognise external influences as an influence on both a users trusting beliefs and the formation of attitudes towards different web sites; ultimately affecting their intention to use a particular website, however, the external influences fail to acknowledge organisation specific factors such as reputation and products sold.

Although Eggers model is considered by the researcher to be the best current model available, new research findings highlight the need for a more up to date model that

incorporates all influencing factors, and provides organisations with guidelines as to what consumers have identified as important to them when making a purchasing decision. As e-commerce research is such a dynamic, fast moving area the literature review had to be constantly updated throughout the study, as a consequence of this a research model devised by Salo et al (Salo & Karjaluoto 2007, p. 618) was identified after this study was completed that attempted to address the issue outlined above, by incorporating all possible factors that may influence end user trust formation (see figure 8).

Figure 8 – Salo Developed Research Model



Salo's model is similar in design to the model created by this study in that it looks at the effect of both internal and external factors has on a users trusting beliefs, however, it is limited in that it fails to fully utilise the arrow system to represent the relationship determined. Another criticism is that, similar to the McKnight Trust Building Model, the way it has been structured makes it difficult to follow. It is suggested that an alteration to the design of the model would make it much clearer to read.

The impact of the models evaluated in relation to the development of the design of the model created in this study study will be discussed in more detail as part of chapter 10.

### **2.3 PREVIOUS CONSUMER RESEARCH FINDINGS**

Although examining the available literature on trust can explain the bases for trust and what factors may affect consumer's decision to trust a website with their personal information, it is also important to gain an understanding of current consumer perceptions of e-commerce. By looking at previous research on consumer perceptions, such as surveys conducted, general attitudes on such issues as security and payment options can be established, and the depth of the problem ascertained.

Companies wanting to determine their target audience reactions to a new product often use surveys as part of their market research strategy. Surveys are believed to be a key tool in research for establishing the attitudes and views of the participants. Through careful selection of the questions, organisations can ascertain consumers' general perceptions or more specifically focus on any issues or concerns. Although much of the original market research on e-commerce is now outdated, there are a few

recent surveys that have looked at how consumers feel about e-commerce as an alternative to conventional high street shopping and what may be the deterrents preventing people from purchasing online.

A survey published by Ofcom in August 2007 reported that women are more likely to purchase online than men; however, when men do shop online they spend more with an average of £111 a month compared to £70 a month for women (Allen 2007). Although the consensus of recent survey findings suggest that women are now spending more time online than men, with young women aged between 18 and 34 identified as the most prevalent group online (Allen 2007), the literature review was unable to locate recent research statistics determining which group actually purchases more online.

The *Independent Retail News* survey also showed that a user's age is a factor for consideration, with people aged between 25 and 34 most likely to shop online, those aged over 55 were the most reluctant online shoppers and the 35 to 44 year olds were the biggest spenders, spending on average £130 a month (Allen 2007). In comparison survey findings from 2007 report that "the internet landscape is shifting, with a quarter of the online population now at least 50 years of age" (Schiff 2008). This shift in online demographics is reflected by the online marketing term "silver surfers" (Schiff 2008), used to describe the mature market estimated to contain "over 10 million older adults surfing the Internet, looking for information, products and services targeted just for them" (Schiff 2008).

A consumer's marital status is also believed to influence their purchasing decision. Findings from an Autumn 2003 survey by Nielsen NetRatings showed that although single surfers spend more time online averaging at 46 minutes a month, compared to the 32 minute average of married surfers, more than 52% of married web users purchased online compared to 47% of the single participants (Rush 2003). The survey determined that this was due to the fact that the web was seen as more of a functional than recreational resource for married surfers, with the convenience of Internet shopping seen as a great advantage particularly for those that had children.

The Consumer Web Watch National Survey of Internet Users entitled *Leap of Faith: Using the Internet Despite the Dangers* (2005) examined consumer perception of e-commerce. The survey results were derived from interviews conducted in May to June 2005 with 1,500 US Internet users who were aged 18 or over. The survey aimed to gain a better understanding of how consumers view the web and in particular, any concerns they have about going online. Consumers were asked a variety of questions about different types of organisations such as e-commerce sites, information sites and even the U.S government. Interestingly, only 29% of users said they trusted web sites that sell either products or services. On web sites where consumers can spend money, expectations were high with more than three quarters of respondents believing e-commerce sites should provide specific, accurate information about the site's policies and practices and 95% of users said it was very important that the site should disclose all fees. Nonetheless, the survey findings showed that 65% of users had used their credit card online, with users that have been online more than three years 43% more likely to use their card than those online six months or less. This figure suggested that



a consumers level of online experience is also an influencing factor on their decision to purchase online.

One area of research has focused particularly on the issue of web design and the affect this has on a consumer's decision to purchase from the site. A reflection of the considered importance of this was the creation of the Internet Consumer Purchasing Behaviour Study, which is an ongoing joint project of the Direct Marketing association, e-commerce services provider SysIQ and the Haas School of Business at UC Berkeley (Cox 2004). The purpose of the study is to understand and measure the effects of various attributes of a website on Internet consumer purchase behaviour.

A 2003 survey conducted by Genex (Greenspan 2003b) of 1,100 U.S Internet users aged between 25 and 54 found that 30% of the study participants believed the design of a web site is more important than the product and 65% of the participants stated they would not purchase from a poorly designed website even it was their favourite brand. Even more significant was the finding that nearly 30% claimed they would stop buying from their favourite offline store if their online experience with the company was poor.

The usability of the web site was also identified by the Genex survey to be an important factor. However, this was more of an issue with younger participants as more than 75% of those aged between 25 and 34 thought it was an extremely important factor in their on and offline purchases, compared to 64% of those aged between 45 to 54 (Greenspan 2003b). This finding was in agreement with a study by Merrilees and Fry that link the interactivity level of a web site with the positive perception and level of trust of it (Merrilees & Fry 2003, p.123).

Unsurprisingly, the main two credit card companies, MasterCard and American Express have conducted the most significant surveys into the barriers for e-commerce and concerns with sending credit card details over the Internet. In October 2000, American Express published the findings from its *Global Internet Survey (2000)*. The survey polled 11,410 Internet users and non-users from ten countries around the globe. The countries were: Argentina, Australia, Brazil, Canada, Great Britain, Hong Kong, Italy, Japan, Sweden and the United States. The survey attempted to address some of the key factors perceived to be deterrents to online shopping such as accessibility, security and lack of knowledge. The findings showed that 46% of participants had access to the Internet at some location, with the highest levels of accessibility in Sweden with 74% of the population regularly going online. However, it was established with the Internet users that e-mail communication and information gathering were the most predominant applications used by 74% and 73% of respondents respectively, with only 28% of participants stating they were shopping online already or planned to do so in the next year. The highest proportion of online shoppers was found in Hong Kong, with 54% of the population already purchasing goods online. Of those items purchased online, the majority were small-ticket items such as event tickets (46%), books (40%) and games (28%). Despite the number of people switching to online shopping, the report concluded that consumers still lack confidence with the process and would prefer to continue with the traditional shopping channels. This was shown by the fact that 72% of the participants would rather use the Internet to browse and then make the purchase offline. A possible explanation for this view was that almost four in five respondents, (79%), cited security concerns when purchasing or making financial transactions online. Trust was believed to be the main issue, with the respondents stating that trust in the product

(81%) and in the retailer (78%) were the most important factors when buying online. Other important factors identified were concerns over service issues such as returning goods and lack of knowledge, with 67% of respondents believing they should know more about the Internet than they do.

MasterCard's "Internet Consumer Segmentation Research" (Greenspan 2003) was conducted in Autumn 2002. Internet surveys were dispatched to 1,024 U.S consumers who had been pre screened on the phone to make up a representative sample of adults who had Internet access. The sample was made up of an equal number of male and female participants between 18 and 69 years old, who owned a credit card, earned over \$15,000 a year and had been online for at least 30 days of personal use. The aim of the study was to segregate the participants into smaller groups of consumers with similar purchasing traits and Internet experience, determine why certain consumers did not choose to purchase online and establish if there were any common factors that were acting as a barrier to e-commerce. The results showed that the main concern for all consumers was security, with 73% of participants stating that enhanced security features would influence their decision to purchase online in the next three months. This finding was supported by the fact that 70% were reported to have concerns over security and fraud issues and more specifically 61% were concerned that hackers would intercept their credit card details. The survey segmented the participants into five categories of consumer. Confident Core Users made up 22% of participants. These were identified as having the highest web usage, averaging 5.9 years online and the most online purchases, with 18% of their total credit card spending done online. Nevertheless, this group still reported moderate concerns about security on the Internet. Another 22% were made up of Cautious Shoppers. This group exhibited

lower online shopping and, although still Internet savvy, were generally less experienced in using their credit card on the Internet. At 11%, Technology Sceptics were the smallest segment and represented the least experienced Internet users averaging 3.8 years online. They were established as having the highest concerns about Internet security, privacy and technology in general and consequently were more comfortable with traditional shopping channels (Greenspan 2003). The remaining 23%, representing the largest segment, were identified as Curious but not Convinced shoppers. These were the users with low levels of experience purchasing online and low levels of usage of general Internet services, but who were believed to be beginning to recognise the benefits of the Internet.

Melinda Cuthbert (Olavsrud 2003), chief executive of ShopTok.com, an e-business customer services organisation, identified six basic types of shoppers and the key influences on their purchasing decisions. New to the net shoppers or "Newbies" are consumers who have little online experience and so are likely to use the web to research the market and make small purchases. By incorporating a simple interface, pictures of the products and an easy checkout process into a web site, these shoppers can be guided around the site. This will build their confidence and encourage them to complete sales transactions.

Reluctant shoppers prefer to use the Internet as a research tool looking into products rather than purchasing them, as they are nervous about security and privacy issues. This is seen as an important problem for e-commerce retailers, with findings from an AOL/RoperASW study (Olavsrud 2003) conducted in March 2003 reporting that 77% of U.S Internet users visited web sites to gather information about what product to

buy, yet only 60% actually purchased online. It was suggested that organisations can help this situation by clearly stating security and privacy policies and by offering immediate online support to make the consumer feel more comfortable and help dispel concerns. This was supported by the results from the 2006 Pan and Zinkhan study, that found that privacy disclosures on websites will positively affect an online shopper's trust of e-tailers (Pan & Zinkhan 2006, p.336).

In contrast, Bargain shoppers' main concern is the price of a product. They use comparison tools and make purchasing decisions between websites based on the lowest price offered. It is also important that retailers try to ensure this type of shopper are getting the best price available to prevent continuous searching both online and off and offering sale price items can be a good way to attract them to the site.

Surgical shoppers are very precise when it comes to purchasing goods online. They already know what they want to buy and develop a set of criteria for that item. Seeking information on that item and selecting the one that they are confident best fits the criteria set, is how they make the purchasing decision. This type of shopper requires quick access to detailed product information.

Speed is also important to Power shoppers. They do not like to waste time looking around sites and so have developed sophisticated shopping strategies. This group see shopping as a necessity, not a pleasure, and so require instant access to information and support. Retailers who offer recommendations and an easy to navigate web site will appeal to this type of shopper. Enthusiast shoppers take a contrasting view of shopping, seeing it as a form of recreation, making them the most frequent purchasers. Retailers can benefit by offering them engaging tools to view the products. Cuthbert's

survey differs from and is arguably better than other research as it not only identifies factors that will influence an individual's purchasing decision, but also offers retailers guidelines on how to best cater for that type of shopper and so maximising the potential for a purchase. However, one limitation of the study is that it is unclear if the respondents were surveyed on what they perceive to be the main barriers to online shopping, to determine how high security is on their list of concerns.

Interestingly, one area that is believed to be an aspect that can influence an individual's perception has not yet been researched into. Word of mouth is seen by marketers to be of crucial importance to a product's reputation, thus enhancing its perceived trustworthiness. This is supported by the research findings of Koufaris and Hampton-Sosa that state potential online consumers believed that if a company has a good reputation in the marketplace, then a web site is more trustworthy, even if it lacks tangible and physical signs (Koufaris & Hampton-Sosa 2004, p.379).

A study conducted by Forrester Research (Megna 2008) in December 2007 found that online shoppers value recommendations, with findings reporting that 77% of the consumers surveyed said they found recommendations in general somewhat to extremely useful. However, this issue has been overlooked by previous research into the barriers for e-commerce. Nonetheless, the importance of a personal recommendation of a website, by a friend that you trust, will undoubtedly play a part in a consumer's decision to purchase from one website rather than another.

The previous research findings suggest that although security is a major concern for consumers when contemplating purchasing goods online, other issues can also have

an impact on the decision. By considering all the issues raised in the findings, organisations can begin to address the problem by determining the most appropriate action to take from a selection of options, such as incorporating the latest security technologies. Therefore, the next step is to examine the current methods available to help combat the security issue and raise consumer confidence in e-commerce.

#### **2.4 METHODS TO OVERCOME THE PROBLEM**

There are number of initiatives that are hoped will help to combat the perceived problem of security concerns and an overall lack of trust in e-commerce. The methods aim to increase consumer confidence in the online shopping process and can be divided into two main areas of focus: security technologies and website enhancements.

Security technologies main focus is the actual transaction process, an area suggested as being of most concern to consumers in previous studies. There are many possible methods of payment that consumers can use when making purchases online. The default option is that of credit or debit cards. Consumers have to submit their details, usually via a payment form and their account is accordingly debited. An identified concern for consumers is that their details may be accessed by an unauthorised party and used fraudulently. Many credit card companies have tried to combat this perceived fear with the introduction of online fraud guarantees. This means a reversal of risk from the consumer to the credit card company because if consumers' card details are used without their consent online, any money spent will be fully reimbursed. The likelihood of this happening was further greatly reduced by the inclusion of a verification number onto the back of all credit cards manufactured after

2002. The verification number is made up of four digits and is usually found on the top right corner of the signature strip and verifies that the card is legitimate. This system means the purchaser has to have the card physically in their hand when the order is placed, as the number is not contained in the magnetic strip and cannot be found on any sales receipt. The majority of online retailers have now incorporated a request for the card verification number into their shopping cart programs.

Chip and pin technology was also introduced to the UK in 2004 to help combat the growing problem of credit card fraud, however, as the system verifies transaction details at the point of sale using Chip and Pin enabled card readers, "cardholder not present" transactions such as purchases made online are not affected. Verified by Visa was introduced in 2007 as a way of addressing the issue of credit card fraud for "cardholder not present" transactions, such as online purchases. Visa claims it offers their consumers a "simple password-protected identity-checking service that takes the risk out of online retail", and by August 2007 over 10 million UK cardholders had registered with the scheme. Visa Europe's research in Germany, Spain and the UK showed that 84 percent of people who do not shop online would be more likely to with *Verified by Visa* (2008).

Nevertheless, consumers still express concerns with submitting their credit card details, so alternative methods of payment have also become available. American retail giant Wal-Mart has recently updated its payment systems to accept customers' checking account numbers. According to company president John Fleming, the decision was made due to heavy public demand as a high number of customers stated they would prefer to pay for goods online by cheque (Joyce 2003). Another payment



option is to invoice customers. Although usually an option for business-to-business transactions, a number of companies such as Britannia Music do not ask for payment upfront: instead, they send items purchased online to customers with an invoice. Consumers can then either pay online by card or choose to pay offline either by telephone or sending a check by post. The other alternative to card payments is electronic cash or e-cash which is an online form of an electronic purse. The customer opens an account with an e-cash provider and deposits some money. Then, when the customer makes a payment, the e-cash is transferred from their account to the retailers. There are also a number of online payment providers, who customers open an account with and then use those account details when making purchases online. The most popular is PayPal, which is used as the main form of payment on the successful Ebay auction site and handles around 200,000 transactions a day (Wilson 2002). In spite of this high number, both schemes have not yet achieved widespread acceptance. This is believed to be mainly due to the fact that the consumers still need to have trust in the provider and many customers are unsurprisingly reluctant to part with their money before actually making a purchase (Wilson 2002). These methods all come under the "account transfer" system of making payments as defined by Leddingham (Rebel 2002). Unlike in the real world where consumers can hand over the currency directly to the payee and walk away with their goods, the consumers' payment is through the instruction to their bank to authorise the transfer of funds from their account to the retailers. This delay in the payment being received and consequently the receipt of the purchased items is where the concerns arise. For the organisation, the concern is that the consumer actually has the funds available for the purchase and is indeed who they claim to be. For the consumer, the main concerns are that the organisation will deliver the items once the payment has been settled and that

in the process the transaction was secure. The Internet has to be a secure, reliable medium or consumers will never regularly use the Internet as a purchasing channel. In 1997 a set of requirements necessary for secure e-commerce was identified by Henning (Ratnasingam 2000, p.318), termed the "four pillars", these consisted of:

1. Authentication: The sender must be identified precisely with no possibility of fraud
2. Confidentiality: unauthorised parties must not view the contents of a message.
3. Integrity: It must be impossible for changes to be made to the message once it has been sent.
4. Non- Repudiation: The sender of the message is directly related to its contents.

This means that the message sender must be unable to later deny having sent the message.

Ratsingham later made Authorisation, Availability, Confidentiality and Privacy additional pillars (Ratnasingam 2000, p.319). These pillars are made achievable by technological system advancements.

A variety of security enhancing tools have been implemented by organisations, seen to be necessary elements in the transaction process, including firewalls, cryptography and encryption. One such technique is the use of the Secure Sockets Layer Protocol or SSL, used in the majority of B2C transactions. SSL provides a private link to be set up between the customer and the merchant providing security and confidentiality. Encryption is used to scramble the transaction details as it is passed between the sender and receiver and also when the details are already stored on the computers at each end (Chaffey 2002, p.454). Although it would be difficult to obtain the personal card details through interception, the main criticism is that hackers may gain access to

the stored details. Organisations are therefore recommended to store such information on servers that are not directly attached to the Internet.

Secure Electronic Transaction (SET) was developed in 1996 and was designed to ensure information confidentiality, authenticate both merchants and buyers and so guarantee payment integrity. Both SET and SSL use public key cryptography, also known as asymmetric encryption, so called as the keys used by sender and receivers of information are different. The sender key encrypts the message and the receivers' key decrypts it. Consequently, the message is decrypted only when the two keys are used together (Chaffey 2002, p.454). Digital signatures use public key encryption to authenticate the purchaser as they digitally sign the message and the merchant's Digital Certificate confirms the merchant is legitimate. The customer using their private key encrypts the digital signature and on receipt the merchants' public key then decrypts it. Although the verification process is a lot slower than SSL a key feature is that storage is not necessary due to the involvement of a bank; as a result, the customer's credit card details are not stored on a server, so reducing the possibility of fraud (Chaffey 2002, p.456). Firewalls act as a filter for information ensuring the correct data is both entering and leaving the organisation via the Internet.

Such advances in technology mean these security techniques are continually being updated, therefore making it much more difficult for hackers to access private information at increased cost to the organisations. However, organisations recognise the need to invest in such measures, and this was reflected in the findings from the Merchant Risk Councils' 2003 survey of over 6,500 of their members that showed an increase from 13% to 17% of merchants spending greater than 2% of their revenue on fraud prevention from the previous year (Rush 2004).

Website enhancements when incorporated into a site can help raise consumer confidence in the site and increase its perceived level of trustworthiness. Studies already conducted on consumer perceptions of e-commerce show that the design of a web site can influence the consumers' purchasing decision. Therefore, it is important for organisations to determine what can be incorporated into it that will help increase trust and thereby maximise their sales potential. One of the most important factors is that the site must look professionally designed. If the site looks amateurish, this will deter consumers as it raises concerns about the quality of products and security of transactions, as outlined in the Consumer Web Watch research findings *Leap of Faith: Using the Internet Despite the Dangers* (2005). In contrast, a professional look will inspire confidence and exudes a sense of competence. It is also important that the web site is easy to navigate and the interface has to be both attractive and intuitive to use. This is a key reason why web marketers, such as Dr. Ralph Wilson who edits both the Web Marketing Today and Web Commerce websites, suggest that organisations should always use professional web site designers when setting up their site.

Another important issue for consideration is the availability of company information. All web sites should display their owner's contact information, such as an address, telephone number and email address so customers have a real point of contact should any problems arise, and with the introduction of the Electronic Communications Act in 2000, this is now a legal requirement. It is also perceived to be vital to consumers that organisations clearly display company policies such as the returns, shipping and privacy policies. This theory was supported by the finding that 57% of those who use the Internet, surveyed by *Business Week* and Harris (Green 1998), said that their

decision to buy online is clearly influenced by those Web sites that have policies that guarantee security.

It has also been argued that by adding social cues to a web site, a process described as Virtual Re-embedding, organisations can increase consumer's perceived level of trustworthiness in their web site. As the transaction in online shopping is space and time independent, it is devoid of any interpersonal interaction, essentially being an exchange between an individual and a machine (Schaumberg 2002, p.748). Virtual Re-embedding addresses this problem by incorporating social cues such as a photograph, video or speech into a web site and consequently personifying the web site. This reassures consumers, giving them the impression that they are dealing with real individuals. Studies conducted by Schaumberg concluded that Virtual Re-embedding is an effective strategy for increasing consumer trust in an online vendor by helping to create a social presence (Schaumberg 2002, p.748). Netscape demonstrates that the inclusion of certain imagery on a web site can have an effect on consumers. Netscape has the image of a small broken key in the bottom left hand corner of the screen when consumers are viewing pages online. When the consumer enters a secure web site, the system highlights the key bright blue, thus drawing attention to it, and the key is then shown complete. This clever use of imagery gives the consumers assurance that the web site they are viewing is secure and inspires confidence that any information exchanged will be safe.

Web assurance schemes also work in this way. After subscribing to a web assurance company such as TRUSTe and meeting the requirements set out by that company, the organisation can display the web assurance company seal on its web site. This offers consumers reassurance from a third party that the organisation they are trading with is

trustworthy and complies with their policies on privacy. The consumers can, if they desire, click on the seal and be shown detailed information on the policies and requirements set out by that web assurance scheme, allowing them to form realistic expectations of the organisation they are about to deal with (Kaplan 2003, p.106). Numerous studies have been conducted to determine if the presence of such seals actually have an impact on the perceived level of trustworthiness of the site. A survey conducted in December 2003 by NFO and sponsored by TRUSTe polled 1,212 consumers and found that the presence of a seal was a determining factor in the consumers purchasing decision. Over 49.4% of respondents stated they would not purchase from a website or provide any personal information unless a web site posts a privacy statement or seal (Kuchinskas 2003). These findings were reinforced by a previous study conducted by Noteberg, (Kaplan 2003, p.110) which investigated the effect of various types of seals on the consumers purchasing judgement. The study showed that the presence of any seal gave an increased likelihood of purchase. However, a recent study by Kovar (Kaplan 2003, p.110) found that consumers' level of attention and previous exposure to the seal affected the increase in perceived trustworthiness and intention to purchase. This study strengthens the findings of Kaplan that consumers need more education on what these services actually do before the benefits of increased trust can be achieved.

Although a suggested factor when trying to raise consumer confidence is the design of a web site, there are other things an organisation can do to assist in achieving this. By simply selling well-known brand name products, businesses can immediately reduce consumers' fears about the quality of the products, as they are familiar with the item already and so make realistic expectations. This is also believed to help increase the

general trustworthiness of the site as it is argued that trust is encapsulated, maintained and delivered through brands (May 2002, p.251).

Another suggestion is that by simply carrying over the principle of customer service from offline stores, online shopping will focus on meeting customer needs and so inspire confidence through fulfilment. This, however, requires the consumer to have already made a purchase, so does not address the main issue of consumers' lack of trust. Nonetheless, customer service is still something organisations should consider as a tool to help them build consumer loyalty. Haig identifies what businesses have to do in order to keep the online consumer fulfilled. His suggestions include sending goods out with receipts, offering free delivery and a choice of delivery options such as next day, keeping customers informed on the status of their order and clearly showing the availability of products (Haig 2000, p.56). Although it would seem like common sense, many organisations do not offer their customers any such services. Interestingly, one organisation that does have a strong focus on customer service is Amazon.com, which is one of the most successful and well-recognised online retailers in the world. In the American Customer Satisfaction Index (ACSI) 2003 report published by the American Society for Quality, Amazon was rated the highest e-tailer with a customer satisfaction score of 88% (Spector 2000, p.239). Amazon proved this dedication to its customers in Christmas 1999 when, although their sales surpassed \$650 million, more than two and a half times greater than they took the previous year, they continued to incur a loss for the quarter as they spent an estimated \$90 million on inventory, to guarantee customers they would get what they ordered in time for Christmas (Spector 2000, p.317). Amazon guides its consumers through the order and delivery process and e-mails are sent out at every stage to keep the consumer informed. The company has grown considerably since it first began trading in 1995

and now has over 5,000 employees in the U.S and Europe. Its amazing rise in popularity has helped establish the company as the benchmark for e-brands and has even recently seen the organisation selling bags with the company logo on. Interestingly the website *Keeping up with the Amazons* (2004) reported that the company had been voted one of the top 11 in the 2003 E-Commerce Transaction Index, compiled by Keynote Systems, which measures the response time and success rate of executing a typical online retail transaction, with a time of around 12 seconds .

Government schemes and new legislation can also help to build consumer confidence in e-commerce. The Electronic Communications Act of 2000 was the first piece of pure e-commerce legislation in the U.K and made an important breakthrough by making electronic signatures incorporating cryptography as legally binding in a contract as a handwritten one. This was a big advancement in security for e-commerce, as it provided a legal standing for both consumers and businesses so that they had a way of claiming back for any losses they may experience when conducting transactions online. The E-Signatures directive, on which the Act is based, set out technical requirements for the devices used to make digital signatures and also for the certificate providers to comply with. Other government initiatives are also helping in the fight against fraud. In January 2003 the home secretary David Blunkett announced that biometric identification cards would become compulsory by 2013. The card would contain basic information such as the name, address date of birth and a photograph of the cardholder. However, the card would also contain a chip containing biometric information such as a fingerprint or iris image. It is this information that is unique to the individual, which according to the website *Q &A: Identity cards* (2003) is seen as a real breakthrough in the fight against fraud, and, the major credit card



companies were hoping to incorporate this technology to prevent the rising card fraud figures, which at the time were estimated at £424.6 million in 2002, which was an increase of £13.1 million on the previous year (Leydon 2003). According to findings of a 2003 survey of over 1000 consumers by the Association of Payment Clearing Services (APACS), the general public believe the responsibility to lie with the banks that issue the cards, not the law enforcement agencies (Leydon 2003). However, only 7% of respondents had ever actually been a victim of credit card fraud. In 2007 it was made compulsory for anyone replacing their passport to have biometric information taken, however it is yet to be seen if biometric cards will actually follow this.

A government backed scheme, 24/7, was launched in 2003 by the Interactive Media in Retail Group or IMRG. The scheme focused on the message "Internet shopping is safe" and numerous large retail companies such as Marks and Spencer and Boots took part in the campaign to encourage consumers to shop online, with incentives such as free delivery and over £12 million in prizes. The scheme was a great success with some of the participating companies seeing as much as double the number of visitors to their sites. *U.K. push of online shopping results in 4% growth from one day to next* website stated that IMRG identified that the campaign's primary target was the 18 million online adults in the U.K. yet to shop online, and the promotion was strongly biased towards women. Marks and Spencer, perceived by many consumers as a more traditional store was a surprise sponsor of the scheme. The organisation is however keen to establish a strong web presence and launched in February 2004 the Marks and Spencer Lifestore, which the company claimed to be a whole new concept in home shopping. The website had a completely new section devoted to the companies home range, which uses photographic imagery to convey to consumers how the products

would look in their homes, and offers direct links to an online shopping cart program. The large investment by the company in the scheme reflected the retail industry predictions at the time that online business will steadily continue to grow, as its convenience as seen as a great advantage for ever demanding consumers. In December 2007 this online investment was rewarded as although Marks and Spencer saw a 2.2 per cent drop in Christmas sales, their web sales were up 40 per cent (Mari 2008)

## **2.5 FUTURE PREDICTIONS AND CONCLUSIONS**

It is clear that not all consumers are comfortable about purchasing goods online. This may be the explanation as to why e-commerce is yet to reach its full potential and deliver the predicted financial rewards of now seemingly unachievable sales figures originally predicted. Nevertheless, figures show that online retail is not only growing at a substantial rate, but at a rate significantly higher than all other forms of retail. In the U.K it was estimated that by the end of 2003, more than half of the population would have purchased something online (Greenspan 2003a). In a 2003 survey respondents were asked if their online buying was going to increase and over 71% answered affirmatively, compared to the 54.5% in 2000 (Greenspan 2003a). In line with these healthy statistics, Jupiter Research predicted in 2003 that 65% of the worldwide online population, 142 million people, would have made a purchase online by 2007 (Greenspan 2003a). In October 2005 a study conducted by RSA security compared consumer attitudes of e-commerce security in the UK, US, Germany and France. The results found similar opinions across the countries and suggested that fears of online crime were still holding back online spending, even reporting that 13% of the UK respondents were now spending less online than they used to (Thompson

2005). In contrast, survey findings published on the *Latest UK Online Spending Figures* website (2007) by market research organisation Verdict Research in June 2007 found that UK online retail sales grew by a third in 2006, with online sales passing £10 billion. As a result of the survey findings, Verdict have now predicted that online spending will reach £28 billion by 2011, accounting for an estimated 8.9% of all retail spending in the UK. However, Internet Measurement Research Group (IMRG), predict greater increases stating that Internet shoppers will spend £78bn a year online by 2010, which will double the share of retail sales to 20% (Charlton 2007).

If current predictions are to be met, then businesses need to consider the numerous concerns and issues raised by consumers in previous research findings. Advanced security techniques and credit card guarantees offer a new level of protection for consumers. This suggests new research needs to be undertaken to determine the current consumer perceptions of e-commerce. By gaining a better understanding of how people today view e-commerce, it can be discovered if it is the issue of trust that is the main barrier to e-commerce or is something else holding it back? Conducting new research into current consumer attitudes to e-commerce and the trust issues that surround it can only really discover the answer.

## CHAPTER 3

### METHODOLOGY

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The objectives of the research were achieved by conducting both primary and secondary research. The secondary research was based on an extensive literature review. This was completed in the first year of study and has been continuously updated thereafter. The primary research was completed using a variety of data collection techniques, such as interviews, surveys and observation studies. The main body of the primary research was conducted in the second year of research and was carried out via the distribution of a structured questionnaire. The questionnaire was distributed by two methods; via email to a population of approximately 2,000, made up of both staff and students from within four different university departments; and also personally administered to 200 shoppers in a traditional retail environment. The responses were recorded and later analysed. The two distribution methods were selected as necessary to target both frequent and non-frequent users of the Internet.

A variety of research techniques were considered before the final methods were selected. Techniques were chosen that could ensure that the most relevant information pertinent to the research question was generated. These considerations are detailed below.

### **3.1 Secondary Data Collection**

Secondary data was collected from both electronic and printed sources. Electronic sources included electronic journals, websites, newspapers, CD-ROMS, e-newsletters, e-books, search engines and electronic databases. The benefits of using electronic sources include fast retrieval and regularly updated information. The negative aspect is that the information retrieved is often irrelevant or duplicated. However, this problem was lessened by the recent introduction of more specific e-journals, such as, *E-Commerce Times* and *E-Business Europe*. These titles reflect the acceptance of e-commerce and the interest in information in this area. Printed sources consisted of newspapers, books, journals, magazines and previous research theses. The benefits of printed sources are that they are often well-established sources such as the *Financial Times* and they can be easily browsed. The literature review chapter summarised the secondary research findings.

### **3.2 Design of Study**

It is generally understood that all research is based on some underlying assumptions about what makes research 'valid' and which research methods are appropriate. Therefore the most relevant philosophical assumptions to consider when planning a research project are those which relate to the underlying epistemology which guides the research. Epistemology refers to the assumptions about knowledge and how it can be obtained (Myers 1997). These underlying epistemologies are commonly referred to as "research paradigms".

Research is generally considered to be Positivist, Interpretive or Critical, evaluated in terms of which approach or paradigm has been adopted. These categories were suggested by Orlikowski and Baroudi, following Chua, and are summarised below.

- Positivist studies generally attempt to test theory, in an attempt to increase the predictive understanding of phenomena. Positivists generally assume that reality is objectively given and can be described by measurable properties which are independent of the observer (researcher) and his or her instruments (Myers 1997).
- Interpretive researchers start out with the assumption that access to reality (given or socially constructed) is only through social constructions such as language and shared meanings. Interpretive studies generally attempt to understand phenomena through the meanings that people assign to them. Interpretive research does not predefine dependent and independent variables, but focuses on the full complexity of human sense making as the situation emerges (Myers 1997).
- Critical researchers assume that social reality is historically constituted and that it is produced and reproduced by people. Although people can consciously act to change their social and economic circumstances, critical researchers recognize that their ability to do so is constrained by various forms of social, cultural and political domination. The main task of critical research is seen as being one of social critique, and therefore by focusing on the oppositions, conflicts and contradictions in contemporary society, it allows the restrictive and alienating conditions of the status quo to be exposed, helping to eliminate the causes of alienation and domination (Myers 1997).

It is undetermined if these three paradigms are opposing or if more than one can be found within a successful research study.

Quantitative methods are, in general, supported by the positivist paradigm, as it leads us to regard the world as made up of observable, measurable facts. In contrast qualitative methods are generally supported by the interpretivist paradigm, which portrays a world in which reality is socially constructed, complex and ever changing "This does not mean, however, that the positivist never uses interviews nor that the interpretivist never uses a survey. They may, but such measures are supplementary not dominant" (Glesne & Peshkin 1992, p.9).

In relation to this study, although the theory of Critical research can be rejected due to the focus of the research being to understand consumer perceptions rather than a critique of society as a whole, there are elements of both the Positivist and Interpretive approaches.

The term "research design" refers to "the basic plan or strategy of the research, and the logic behind it, which make it possible and valid to draw more general conclusions from it" (Oppenheim 1996, p. 83). It was necessary to consider the primary research method before any other considerations regarding specific research techniques were made. A research method is a strategy of inquiry which moves from the underlying philosophical assumptions discussed above to research design and data collection. Obviously, the choice of research method influences the way in which the researcher collects data (Myers 1997). A distinction between different research designs was made on the basis of whether they were qualitative or quantitative in nature, and in

turn, which of these methods would be most appropriate in relation to generating data to help answer the research question.

### **3.2.1 Qualitative Research Techniques**

A good qualitative study can help us “understand a situation that would otherwise be enigmatic or confusing” (Golafshani 2003, p.602). Qualitative research places an emphasis on the individual’s words, actions and records (Bell 2005, p.22). Qualitative research is multimethod in character, involving an interpretive, naturalistic approach to its subject matter by attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them (Denzin & Lincoln 1994, p.34). Interview-based techniques are often employed for qualitative research purposes, as they can establish a variety of opinions in relation to one particular topic. They are a key method of attitude and opinion research due to their adaptability and are considered more effective at collecting information on people’s knowledge and opinions than direct observations, providing a quick and easy way of obtaining large amounts of information (Thomas 2003, p.63).

Face to face interviews are regarded as a superior qualitative technique, as they allow for exploration of issues raised by the respondent. Body language is also an important aspect, as non-verbal clues such as looks of puzzlement can be noted by the interviewer, and used to explore ambiguities and/or build a richer picture. However, interviews are difficult to set up and responses can be extremely difficult to analyse. They are also time consuming, thus limiting the number of people that can be interviewed. As the interview relies solely on the interaction between the interviewer and the participant, difficulties may also occur due to lack of experience of the



interviewer with regards to listening to the interviewee and the ability to keep the conversation focused. Other interpersonal factors such as whether the respondent and interviewer like each other and how much the respondent is “led” by the interviewer may also affect the results. There will always be a danger of bias as it is such a subjective technique. However, if carried out correctly, a face to face interview is more likely to elicit respondents’ sincere opinions. Telephone interviews can be used to remove any geographical boundaries. However, they also have to be planned well in advance and are again time consuming. Although issues can be explored in some depth, this technique lacks the richness of the inter-personal communication of the face to face interview and so are seen as more of a “half way house”.

Although interviews can be constructed in a number of ways, dependant upon factors such as the sensitivity of the subject matter and depth of information required, there are four main types of approach a researcher can take. These consist of the loose question approach, tight question approach, converging question approach and finally the response guided approach.

1. Loose question approach – This involves the use of broader, open questions to allow the respondents unrestricted freedom to say what a word or phrase means to them. The overall strategy is to elicit the individual respondents interpretation of a very general theory (Thomas 2003, p.63).
2. Tight question approach – In contrast this limits the respondent to a restricted set of answers such as yes or no to determine preferences, with multiple choice as an example of a question type used in this approach (Thomas 2003, p.63). Although initially limiting, it can be expanded upon by following up a tight question with the chance to offer a rationale as to why that selection was

made, still allowing in-depth information to be generated, but with a more focused structure.

3. The Converging question approach is similar to above by asking a broad open ended question first. The interviewer can then follow up on the respondent's reply by asking a series of tight questions, so combining the advantages of the two (Thomas 2003, p.63).
4. Response Guided Approach – This approach is unique in that it allows the interviewer to hand control over to the respondent rather than directing the interview themselves. The interviewer begins with a few pre selected questions but then spontaneously creates follow-up questions based on the respondents' answers and so is lead by them, enabling the researcher to investigate in detail the respondents' opinions on matters as they arise (Thomas 2003, p.63). This approach is considered very risky for an inexperienced researcher, because, if not correctly carried out, it may generate irrelevant information.

A disadvantage to all the qualitative methods is that the data generated is discursive text and therefore is difficult to analyse.

Alternative qualitative techniques, such as focus groups and observational studies were also considered. Focus groups are an effective method for obtaining numerous opinions at once, and are seen as somewhere between an in-depth interview and participant observation. They give participants the opportunity to identify and debate issues raised by the group and provide the researcher with a multi-stakeholder perspective. A disadvantage is that the method relies upon an experienced moderator to guide the group and encourage all participants to contribute, whilst remaining

uninvolved in the actual discussion. Furthermore, a dominant person in the group can distort the results. Although they can also be costly and time consuming to organise, focus groups are still valued as an effective method for gaining a more detailed insight into participants' opinions.

Observational studies are less focused on consumer perceptions; however, they do offer an insight into consumer behaviour, as they gather the information by simply observing subjects as they undertake a certain activity and then record what occurred.

Observation can take two forms: either direct, when the researcher immediately sees what is happening; or indirect, where the researcher only has access to a reproduction of an event, such as a videotape. Indirect observation can also be termed mediated observation. Direct observation has the advantage of being amenable to use in difficult contexts, such as noisy settings, but an immediate accurate record is difficult to produce (Thomas 2003, p.62). Non-direct or mediated observations are the least preferred method, used when data can not be gathered through direct means either in terms of access or that it would be too expensive (Thomas 2003, p.62). This is due to the fact that using recording equipment may intimidate some participants and could affect their behaviour, or if the equipment has to be operated, such as changing a tape, the observer themselves can be distracted. It can, however, produce an authentic record of what occurred using media such as a video tape, that can be reviewed time after time, and audiotapes, and these can increase the reliability of the reports (Thomas 2003, p.62).

As with any research technique, careful consideration of the research design must be undertaken before research can commence. This is particularly relevant with

observational studies, as a number of factors need to be considered at the outset.

These factors are discussed below:

- **Natural vs. Contrived Settings:** Natural settings means simply observing subjects in their real life environments, thereby generating more accurate “real life” data. However, this can be very time consuming as the researcher has no control over the subjects and difficulties may arise with collecting the specific information required. Contrived setting is where the specific situation being studied is created by the observer. This allows greater control and the required information to be gathered more quickly and efficiently. The great disadvantage is that it becomes questionable whether the data collected truly reflects a real life situation (Science Buddies 2007).
- **Human vs. Mechanical:** Human observation is when humans capture the data, whilst mechanical is when machines collect the data and then this is later interpreted by humans. The most commonly used and least expensive means of collecting data is with a video camera, as previously mentioned. It offers a much more precise means of recording data than what can be simply recorded by a human being (Science Buddies 2007). Another method is recording keystrokes on a computer using specific capture software.
- **Disguised Observation vs. Non Disguised:** Disguised, or covert, is when subjects are unaware they are being observed. This usually means the subjects act more naturally and so ensuring the data collected reflects their true behaviour. However, as the subject has not knowingly volunteered for the research, recording their information raises ethical issues. When subjects know they are being observed this known as Non Disguised or overt observation. Although it alleviates any ethical concerns, as the subjects are aware their

behaviour is being watched, many of the advantages of using the observational technique are lost as the subjects will adjust their behaviour and so a survey would be just as effective. However, there is one considered exception, and that is when the researcher follows up the non disguised observations with a questionnaire in order to get deeper information about a subject's behaviour (Science Buddies 2007).

Another important factor to consider is the amount of engagement the observer will have with the subjects they are observing. The term "Participatory Research" is used to describe the methodology that focuses on the opposing observational approaches of the outsiders view versus the insiders (Thomas 2003, p.75). These are the choices available to the researcher in terms of the different degrees of engagement they have with their participants, from silently observing them from afar as an outsider, to sitting and chatting with them taking notes, gaining an inside perspective.

It has been argued that in order to be as representative of a "real life" situation as possible, it is best that the researcher has no participation with the subjects (Spradley 1980, p.58). This is a common sense approach as the more remote the researcher is, the less likely they will influence the behaviours of those being observed (Tolman & Brydon – Miller 2000, p.5).

The technique of Experience Narratives was also considered for the research. They are defined as an account of an event as described by a person who was actively involved in it, either as an active participant or an observer. Although potentially relevant to the research objectives, as the purpose of them is to allow the participant to reveal their individual perceptions of selected life experiences, the technique was

ultimately rejected due to the fact such narratives are widely considered to be ineffective for revealing how characteristics are distributed amongst a population, and they are not considered trustworthy generalisations (Thomas 2003, p.39). It is interesting to note that as an important fact about the human perception process is that they can only purposely attend to one thing at a time, except when activities have become habitual (Thomas 2003, p.60). This suggests that a subject would be unlikely to be able to successfully undertake an observed task whilst simultaneously providing a narrative.

### **3.2.2 Quantitative Research Techniques**

Quantitative research is concerned with the collection of facts and the investigation of the relationship between one set of facts and the other (Bell 2005, p.34), seeking measurements and analyses that are replicable by other researchers. This allows the researcher to “familiarize him/herself with the problem or concept to be studied, and perhaps generate hypotheses to be tested, in this paradigm the emphasis is on causes of behaviour” (Golafshani 2003, p.601).

A quantitative method should offer reliable and valid ways of collecting data, (expanded upon in section 3.3), which in turn can be statistically analysed to test the hypotheses. The research design is analytical in nature, as it attempts to determine cause and affect relationships; this is achieved by adopting methods such as questionnaires or surveys.

Surveys are an effective method for gathering information about selected characteristics of members of a group and the group as a whole. Surveys reveal the present status of the selected characteristics and correlation studies can be used to reveal the possible relationships among the characteristics. Such methods provide

results in the form of frequencies that enable researchers to draw distinctions between sub-sets of a group and the group as a whole (Thomas 2003, p.56). This enhances the accuracy of description as the variables are reported in numerical form such as frequencies and percentages, in contrast to if the results are reported by means of imprecise verbal expressions such as many or a few (Thomas 2003, p.44).

However this can be also be perceived as a disadvantage, as quantitative surveys fail to describe the qualitative features that make for the uniqueness of each member of the group that the survey is meant to represent (Thomas 2003, p.44).

An important issue to address when using of surveys is how it will be disseminated to respondents. A postal questionnaire requires no special technical skills from the respondent and ensures the respondents are anonymous. However, delivery is slow, dissemination is expensive and they usually give a very low response rate. In contrast to this, e-mailed questionnaires have the advantage of being inexpensive to distribute with rapid delivery and respondents are more likely to reply quickly. However, respondents must be familiar with e-mail and have access to the Internet with a current e-mail address, which may be difficult to gain access to. Alternatively, the researcher, using a structured interview, can administer questionnaires personally. This enables quantitative data to be gathered from the questionnaire responses, but visual cues such as body language can be added to aid respondents with any difficulties, leading to a richer picture.

### **3.2.3 Method Selection**

It was decided that, although the research was qualitative in focus, as the main aim was to investigate consumer perceptions, it would draw mainly on quantitative techniques due to the ease of collecting relevant data that can be easily analysed, as

discussed above. The techniques are outlined in the quantitative methods chapter. However, qualitative methods of data collection were also used in the third year of study, to further test the research findings. These are summarised in the qualitative methods chapter. This technique of combining both the qualitative and quantitative approaches is known as Triangulation (Golafshani 2003, p.601). It has been argued that both qualitative and quantitative methods can be used effectively in the same research project (Strauss & Corbin 1990, p.18) with useful findings resulting from using a combination of qualitative and quantitative methods.

### **3.3 Reliability And Validity**

In all quantitative research the quality of the study is linked to the reliability and validity of the data (Litwin 1995, p.121). Reliability has been defined as “the statistical measure of how reproducible the survey’s instrument data are” (Litwin 1995, p.121). If the results from a study are perceived to be consistent over time and gave an accurate representation of the population then it is referred to as reliable. In other words, if the results can be reproduced under similar circumstances then the survey instrument is reliable (Golafshani 2003, p.601).

Measurement error refers to how well an instrument performs in a given population. The lower the measurement error, the closer the data is to the truth (Litwin 1995, p.123). In contrast, random error occurs in all research. It is unpredictable and can be caused by many different factors. Sampling is considered to be one of these possible factors and so, one possible method to lower the chance of random error is to increase the sample size, making it more representative. However, even when random error is zero, some measurement error can still occur as relates to precision of the instrument itself (Litwin 1995, p.123). It is argued that as the term “reliability” is concerned with



measurement, it is not necessarily relevant as a judgement of quality for qualitative research (Golafshani 2003, p.601).

Validity of research is determined by whether the research truly measures that which it was intended to measure (Golafshani 2003, p.601). As validity questions are concerned with such measurement issues, factor analysis has been suggested as one way to evaluate validity in research (Ghaebi 2003, p.65). It is based on the fundamental assumption that some underlying factors, which are smaller in number than the observed variables, are responsible for the covariation among the observed variables (Thompson 1951, p. 88). It has been argued that "The factorial validity of a test is given by its meaningful, common, reference factors. This is the kind of validity that is really meant when the question is asked "does the test measure what it is supposed to measure?" A more pertinent question should be "What does this test measure?" and the answer should then be in terms of factors." (Thompson 1951, p. 88). This argument was strengthened by the statement that "Factor analysis is intimately involved with questions of validity". (Gorusch 1983, P. 72).

### **3.3.1 Methods Used to Increase Reliability and Validity**

In order to try to overcome the issues outlined above, a number of measures were incorporated into the design of the study;

- Adopting the triangulation method of combining research approaches has been identified as a "validity procedure" (Golafshani 2003, p.602).
- Previous studies of trust in e-commerce suggested topics for investigation; comparisons with these earlier results can be used to strengthen results

- The inclusion of questions similar to those from previous studies was used to increase the reliability of the questionnaire
- The Likert scale study involved the repetition and rewording of key questions in the questionnaire. This is to counter the tendency of subjects to agree with attitude statements and also to identify invalid responses, as identified in previous research (Golafshani 2003, p.602).
- Factor Analysis was used to evaluate the validity of the research, as discussed above.

**CHAPTER 4****QUANTITATIVE RESEARCH**

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As discussed in the previous chapter, a variety of research methods were established to be necessary in data collection to obtain both the quantitative and qualitative information required. The quantitative method of questionnaires was selected for the main body of the research due to its advantages relevant to the research objectives. This research is outlined below:

**4.1 Research Design**

The main body of the research was conducted using questionnaires. This offered speed, efficiency and value of data generated. Careful consideration of the design was essential to obtain the required information via the responses. Using the two forms of distribution, the questionnaire technique was fully utilised, and the use of personally administered questionnaires offered a combination of the richness of qualitative techniques with the ease of quantitative data.

**4.2 Questionnaire Design**

A number of key issues had to be addressed when designing the questionnaire. The questions were carefully selected to ensure the information gathered from the responses was relevant and met the aims and objectives of the research. It was also important the questions were free from ambiguity and bias.

The questionnaire was designed to be used in both an electronic and paper formats. The electronic format was created using Microsoft Word as it was easily available and

was deemed to be the most suitable software to use when considering compatibility issues for respondents, due to the popularity and dominance of the Microsoft Office package. Drop down boxes offered respondents options to select. This made the data entry process quicker for the respondent, reducing the risk of failure to complete and making the questionnaire look more attractive and professional. The paper format used face to face contained the same questions. However, responses were not suggested; instead, suggestions were used as prompts by the researcher only if the participant was struggling to find a response. The questionnaire contained 29 questions that were separated into four key sections: personal information, online experience, e-shopping experience and general shopping attitudes. The length of the questionnaire had to generate the required data, while not becoming tedious for the respondent. The questions were structured to make the questionnaire flow easily and responses easier to analyse. A variety of question types, as defined by Youngman (Bell 2005, p.36), were incorporated, including list questions, which offer the respondent a number of specific responses. The option of inserting their own response was offered in the "others" section to reduce restriction of responses and incorporate a qualitative element.

#### **4.3 Pilot Study**

A pilot study was conducted to carry out preliminary analysis before the quantitative data gathering commenced. A total of six responses were gathered from personally administered questionnaires. A group of six subjects, consisting of friends and colleagues similar to the population of study, were tested during October 2003 to determine if the wording or format of the questionnaires would present any difficulties for the participants. These preliminary results were then drawn on to

develop a refined questionnaire to be used in the research study. This pilot study acted as a “dummy run”, highlighting any areas of concern before the main research was undertaken. Feedback was collected and used to make improvements to the design and structure of the questionnaire helping to eliminate any problems such as ambiguous questions.

The results obtained from the pilot study are presented below. The findings from the analysis are related back to the original aims of the project as set out in the introduction. This process helped to ensure that the data collected from the questionnaire developed as the main survey instrument would be appropriate to meet the objectives of the study.

#### **4.3.1 Pilot Study Results**

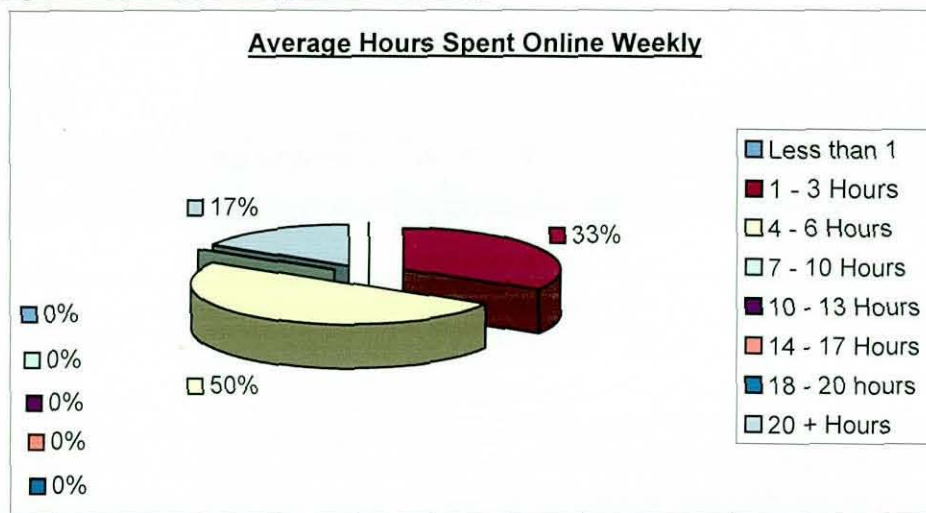
Questionnaires were personally administered to six subjects, who had differing levels of Internet experience. Although an opportunity sample, the subjects were selected to try and obtain a sample representative of the average consumer. To gain a better understanding of the respondent’s background, personal information about the respondents was compiled.

Of the six subjects, four were female and two were male and their ages fell into either the 21-25 or 46+ grouping. The age of the respondents were grouped into categories in order to make them easier to analyse and reduce the sensitivity of the question. There was an even split between married and single subjects, with three of each.

In order to gain a better understanding of the participants’ background in relation to the Internet, a number of questions were asked to ascertain the amount of online experience each subject had.

The findings showed that over 80% of respondents had access to the Internet at home, compared to only 50% with access at work. This is an important finding as accessibility problems have been suggested in previous literature as a possible barrier to e-commerce. The amount of time spent on the Internet varied only slightly between subjects, with the majority of participants spending less than 10 hours a week online.

Figure 9 – Average hours spent online weekly



The findings also showed that, unsurprisingly, the majority of participants, four out of the six, taught themselves how to use the Internet. This highlights the lack of education concerning applications of the Internet. Although in schools and colleges today, students are encouraged to use the Internet and are taught a variety of skills including searching for information, for many older people those skills were not developed during their education, which could potentially account for a perceived lack of knowledge and fear of new technology.

The most pertinent finding was the fact that out of the six participants only two had not yet purchased online. This allows the results from the questionnaire responses to be compared between the online shoppers and non-online shoppers. This is

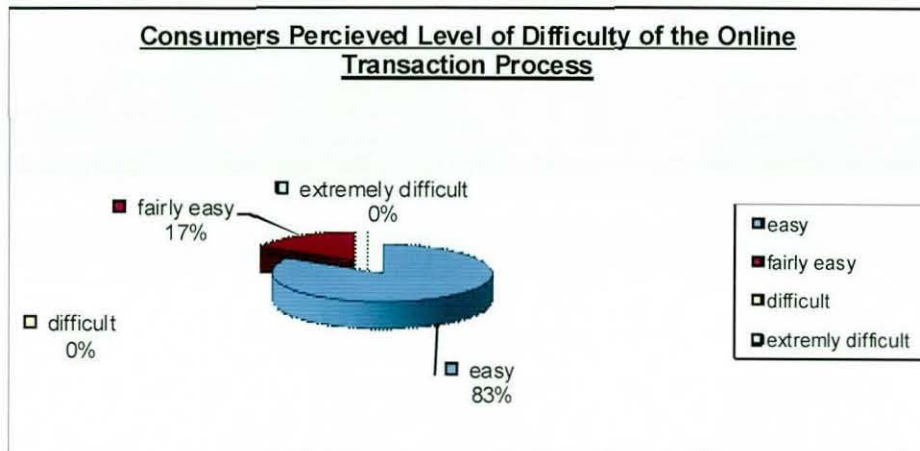
fundamental to the study, as any differences or relationships can be determined and examined to investigate the level of impact they have on the purchasing decision.

#### **4.3.2 Comparison of Online Shoppers and Non Online Shoppers**

The results from questionnaire responses from a specific set of questions were compared for both the identified online shoppers and those participants that had not yet purchased online. The questions were selected for comparison as they were identified by the findings from the literature review as being possible deterrents to e-commerce. This was done to meet the objectives of the research and to highlight any areas that the questionnaire did not cover in enough depth.

The results showed that out of the six possible deterrents to online purchasing, all of non online shoppers stated security concerns was the main deterrent to them, compared with only 50% of the online shopper responses. Difficulties with returns accounted for the other 50%. If duplicated in the main study, these results support the belief that security concerns are a major concern for consumers contemplating purchasing online. It also suggests the other listed deterrents identified in the literature review are not as influential on consumer's purchasing behaviour. However, when comparing the responses between the online and non-online shoppers, there was general agreement that in store transactions are perceived to be more secure than those completed online. In spite of this, online shoppers stated that they were confident that their details would be secure when completing transactions online. Interestingly, another area of agreement was the ease of completing a transaction online. Both online shoppers and non-online shoppers agreed that the process was not difficult; in fact, it was perceived as an easy task. extremely

Figure 10 – Consumers perceived level of difficulty of the online transaction process



If this finding is duplicated in the main study this would be considered an important result as it would contradict one of the previously suggested deterrents to e-commerce, that consumers perceive the level of difficulty completing the online transaction process to be extremely high.

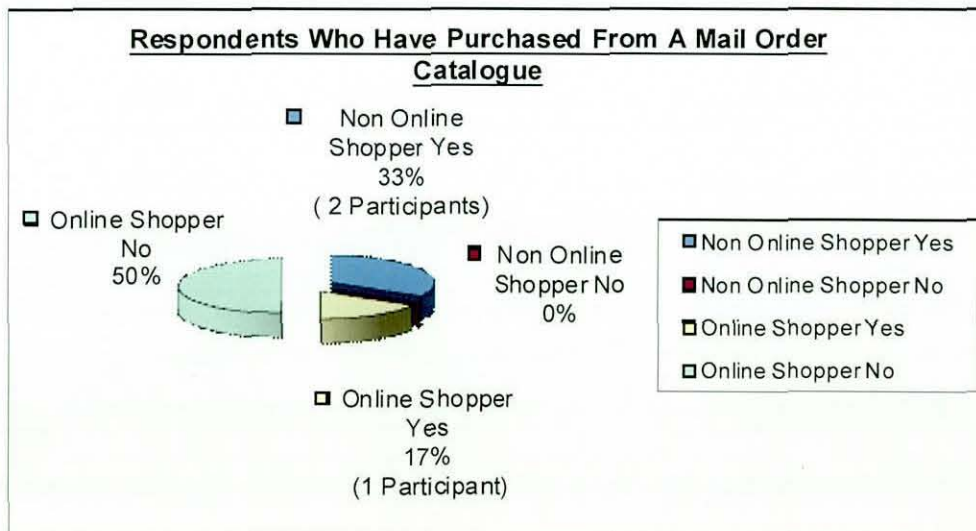
In order to establish the participants' general attitudes to shopping, the questionnaire included a section focusing on shopping in the traditional high street environment. The findings showed that nearly all the respondents very much enjoyed shopping, with only one negative response given. This is an important question to ask, as previous research studies have categorised shoppers into various groups that display certain traits. One group are identified as shoppers who do not enjoy the experience, instead viewing it as a chore and it has been suggested that these are unlikely to purchase online due to negative perceptions of the shopping process in general, not just online. When asked to state what part of the high street shopping process was essential to them, both the online and non-online shoppers gave similar responses. The majority believed that seeing the tangible product was of uppermost importance with half of the responses, closely followed by immediate acquisition of the product.



Although this may appear disturbing as both aspects are believed to be possible deterrents to online shopping, as they are unavailable to online consumers, it is clear from the findings that the respondents who are online shoppers also view the ability to see the tangible product as important, yet it does not prevent them from buying online.

One area of investigation for the research study is the fact that consumers seem to have these concerns about giving their personal information such as credit card details online, yet these concerns are not present when purchasing in a store, over the telephone or even by mail order. Therefore, to enable a comparison to be made, the questionnaire asked respondents if they had ever purchased from a mail order catalogue.

Figure 11 – Respondents who have purchased from a mail order catalogue



This discovery supports other findings from the pilot questionnaire that consumers feel that online transactions are less secure than transactions conducted in store. Again, this illustrates the beliefs that not only is trust the main deterrent to online

shopping, but that the security concerns seem to be specific to the Internet medium and do not extend to other forms of shopping.

#### **4.3.3 Questionnaire Revisions**

The pilot study did generate some important findings. However, the main aim of the study was to “dummy run” the questionnaire, enabling all ambiguous questions and areas of concerns to be brought to light and amended. Although the participants did not have any problems with ambiguous questions, certain refinements were made to the questionnaire design. These included a question that asked participants to respond to a list of statements, using a Likert scale. This was incorporated into the questionnaire as it enables the results to be focused on the consumers selected response to the statement, making the data quantitative and easier to analyse whilst determining the participants’ opinion on what they perceived to be the most important statement and this was fundamental to achieve the aims of the research. The inclusion of Likert questions also meant that factor analysis could be conducted on the responses, giving the research more depth.

The revised questionnaire also included category questions for the sensitive issues such as age. It gave the respondent a set of range of responses to choose from, rather than having to give the exact answer, which is less intrusive and so minimises the risk of causing embarrassment. Also the focus of the research question was considered. When trying to determine the level of education achieved by a respondent, in order to remove any potential embarrassment for the participant the question was focused on trying to ascertain at what level they left education, rather than what specific qualification level they achieved. The responses were therefore selected to represent

the levels of qualification achieved within the U.K education system at that point in time, for example high school is attended by 14 to 16 year olds whilst undertaking their G.C.S.E exams.

The structure of the questionnaire was also altered, moving the section on general shopping attitudes to the beginning of the questionnaire and the more detailed questions on e-shopping experience to the end. This was done to ease in the respondent and to encourage them to complete the questionnaire.

The findings from the pilot study reinforced the need for more detailed questions and some were therefore added to develop a richer understanding of the current perceptions on e-commerce, focusing in particular on security concerns and the issue of trust. Obviously, the pilot study sample population was too small to ascertain a representative result. However, it achieved its aim of enabling the refined questionnaire to be developed and this will be used in the main research study. It also allowed the research design to be finalised, which helped inform the application for Ethical Clearance to be approved by the Ethical Advisory Committee, necessary before any research involving human participants can be started, and the completed checklist document is included as Appendix 1.

#### **4.3.4 Model of Trust**

The pilot study highlighted certain factors that could influence a consumer's Internet purchasing decision and their perceived trust in a website.

These findings were used to develop the trust model. The factors were incorporated into the trust model initial design, to visually show both external and internal

influences that effect trust in consumers making purchasing decisions on the Internet. The trust model also incorporated findings from the secondary data outlined in the literature review chapter.

A pilot study was conducted to carry out preliminary analysis before the data gathering commenced. A group of six subjects, consisting of friends and colleagues similar to the population of study, were tested during October 2003 to determine if the wording or format of the questionnaires would present any difficulties for the participants. Feedback was collected and used to make improvements to the design and structure of the questionnaire, helping to eliminate any problems such as ambiguous questions. This process acted as a "dummy run", highlighting any areas of concern before the main research was embarked upon. The questionnaire design was then revised in light of the pilot study findings. Changes included the removal of the separate question sections. The revised questionnaire included category questions for sensitive issues such as age. This gave the respondent a set of range of responses to choose from, rather than having to give one exact answer. This was less intrusive and so minimised the risk of causing embarrassment. The personal questions were moved from the beginning to the end of the questionnaire, to prevent any possible reluctance from participants to complete them. Also a Likert-type scale of responses was introduced for a set of key statements, enabling the respondent to rank responses, depending upon their level of agreement with the statements. Although longer, with 32 questions, the information generated from the questionnaire amended as a result of feedback from the pilot, (see appendix 2) was relevant to the research and all the information generated was used later to test the Trust Model.

#### **4.4 Sampling**

A sample of the population had to be selected to participate in the study. To make the sample more representative of the two types of consumers of interest, two sub groups were selected. The sub-groups were chosen to allow comparison between shoppers in a traditional retail environment, that had an unknown level of Internet experience, and a selection of the staff and students at a leading U.K university that were likely to be regular users of the Internet. These comparisons allowed the researcher to test for any differences or similarities between the two different samples.

##### **4.4.1 Sample Selection**

The first group was made up of both staff members and students at Loughborough University. The sample was further stratified, as participants were taken from three different departments within the university. These were the Department of Information Science, the Business School and the Department of Computer Science. It was decided that all three departments would be used as this greatly increased the potential size of the sample, reducing the chance for random error and making it more likely to be representative of the University population. These departments were selected as they were identified as being most relevant to the area of study. This was due to the fact that within these departmental courses, a number of modules focused on e-commerce and e-business. The staff and students in the departments were easily accessible and the respondents were likely to be familiar with the Internet. The University questionnaire was designed incorporating drop down boxes, and was distributed by email to approximately 1,300 people between July and September 2004. With a response rate of approximately 20%, associated with e-mailed questionnaires, around 250 responses were anticipated.

The second group was made up of shoppers selected at random in Loughborough High Street, an example of a retail-shopping environment with traditional bricks and mortar stores. Respondents were stopped at random from passing shoppers at the entry points into the Carillon Court shopping centre during the July to September period in 2004. This sample reflects the email sample as they are both a random selection, relying on participants to volunteer. The questionnaire was laid out to allow for any additional information obtained from responses as it was administered personally to participants. This face to face administration meant that non-verbal cues such as body language could be used to deal with any respondent confusion whilst completing the questionnaire.

#### **4.4.2 Limitations of the Sample**

It is important to acknowledge a number of shortcomings with regards to the chosen samples of participants. The numbers of participants included in the investigation was very much influenced by the fact that “all researchers are very much dependant on the goodwill and availability of subjects” (Bell 2005, p.52). Therefore, the most appropriate method of sampling selection was the opportunity sample, as the participants were easily available for testing (Bell 2005, p.52). There was no other way of recruiting participants other than asking for volunteers within an already restricted population. As a result, this method of selection was *non-random*, as the sample was restricted by both the availability of participants and the fact that it only comprised of volunteers, who were presumably interested in the topic.

## **4.5 Data Analysis**

Once the data from the questionnaire responses had been collected and compiled, it was analysed using three different techniques.

### **4.5.1 Descriptive Statistics**

The first stage of the analysis was to visually display the data results in a summary format, which could be used to identify patterns. The creation of a frequency table allowed a breakdown percentage of the responses to each individual question to be presented.

Cross tabulation was then used to build on this by creating a table that allowed responses to be directly compared against each other. The table was used to determine if there was a positive or negative relationship between the responses, and this was further analysed to see if the relationship identified was statistically significant.

### **4.5.2 Inferential Statistical Analysis**

Inferential statistics differ from descriptive statistics as they are used to infer something about the population from the sample data (Litwin 1995, p.64). Inferential analysis was used to determine if the relationships observed between the variables were significant at a level that enabled a null hypothesis to be rejected. A non-parametric test was selected as it does not require assumptions about the shape of the underlying distribution and the data collected was ordinal. The Chi-Squared test was determined to be the most appropriate for the analysis.

### **4.5.3 Analysis Software**

The analysis was carried out using the Statistical Package for the Social Sciences (S.P.S.S) Software. This software was selected, as it is a powerful data analysis tool, which is particularly good when using survey data such as the quantitative data from the questionnaire responses, and was readily available.

Once the data had been analysed, it could be assessed for any relationships between the responses, highlighting any significant correlations. These findings are presented in the quantitative results chapter to follow.

### **4.5.4 Factor Analysis**

Factor analysis is a data reduction technique which allows key factors to be identified and extracted from a set of larger variables. These extracted factors are “assumed to represent the validity of the underlying latent constructs being investigated in a research study” (Thompson 1951, p.92). The data collected from both the email and retail respondents’ was inputted into S.P.S.S, to create one large data set. This was then rotated by the software, using the Varimax rotation method, and the data was then grouped into clusters of variables allowing correlation between these clusters to be analysed, and enabling the dominant variables to be exposed. The analysis produces a number of outputs, which are presented and discussed in the quantitative results chapter to follow.



Factor analysis was particularly important for this study as it enabled the key concerns for consumers when purchasing online to be identified, allowing the non critical issues to be disregarded and the trust model to be revised to reflect these findings.

*Linear Structural Relationships, or L.I.S.R.E.L, is a computer program that was developed to do covariance structure analysis. This uses factor analysis and modelling for analysing hypothesised relationships among latent variables, those that are unobserved, measured by manifest, or observed, indicators* Diamantopoulos & Siguaw 2000, p.129). A covariance structure model is created and these have become so closely associated with the L.I.S.R.E.L program that they are often referred to in research today as L.I.S.R.E.L models. Although established as a useful statistical technique, it was not used for the study as the concern with latent variables is irrelevant. As the study focused on the observed variables from the questionnaire responses, there was not enough of the required data collected to do a full L.I.S.R.E.L analysis.

**CHAPTER 5****QUANTITATIVE RESULTS**

In this chapter, the results from the questionnaire responses are analysed and presented. A total of 395 responses were gathered from the two samples of participants. The results were gathered from 193 responses to personally administered questionnaires in the traditional high street environment, labelled the retail sample (RS) and 202 responses from emailed questionnaires, labelled the email sample (ES).

The first stage of the results analysis was to identify if there was a significant difference between the two samples. This would show if the samples could be analysed together as one large sample, or be kept separate and treated as two individual sets of results. The Chi-squared test was used, as the aim of the statistical analysis was to determine if the distribution of responses over one of the measures is statistically the same for all levels of the other measure, e.g. the difference between the number of online shoppers from the Email sample of responses compared to those from the Retail.

Table 1 Data set & Purchased Online Crosstabulation

		Data set		Total
		Email	Retail	
Purchased	Yes	186	67	253
online?	No	16	126	142
Total		202	193	395

Table 2 Chi Square Results - Data set &amp; Purchased Online

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	141.052(b)	1	.000		
Continuity Correction(a)	138.571	1	.000		
Likelihood Ratio	154.904	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	140.695	1	.000		
N of Valid Cases	395				

The results from the test, presented in table 2 above, showed that there was a significant statistical difference between the two sets of responses. Over 92% of the Email sample participants had previously purchased online compared to only 34.7% of the participants from the Retail sample. The samples were significantly different at the 0.00% level and so the samples had to be analysed independently and then comparisons could be drawn.

### **5.1 Personal Information Gathered from Respondents**

In order to gain a better understanding of the results collected, personal information about the respondents was analysed. This enabled the results to be used to develop the Trust Model and determine the importance of certain key elements that have an impact on the individuals' propensity to trust. This section of the model, shown in chapter seven, comprises of five elements: Gender, Age, Marital Status, Education and Online Experience.

In both samples, there were more female participants than male, with the Email sample comprising of 108 females and 94 male participants. The retail sample comprised of 98 females and 95 males. This meant that overall, 52.2% of the total respondents were female, compared to 47.8% male respondents. Previous research has suggested that women were in fact more likely to purchase online than men (Allen 2007). Analysis of the data showed that there was no statistically significant support for this, with opposing views from both samples.

The email sample results support this, as 52% of the identified online shoppers were female. However, the retail sample results showed that 60% of the identified online shoppers were male, with only 40% female participants. This could be due to the fact that overall, more of the email respondents have purchased online and so other factors need to be investigated. The Chi-square test was used on data from both samples to determine if the relationship between the sex of the respondents and their decision to purchase online was statistically significant. As both sets of results did not achieve the 0.05 level needed to reject the null hypothesis, sex was not significantly correlated with propensity to shop online. As a consequence of this result it was determined that the gender factor will be removed from the revised model design, presented in chapter 10.

The literature review findings concluded that the age of a person was a possible factor when contemplating online purchasing. Consumers aged between 25 and 34 years old were identified as most likely to purchase online, but 35 to 44 year olds were perceived to be the biggest spenders online. The consumers aged over 55 were believed to be the most reluctant shoppers (Allen 2007). The results from both

samples supported these findings, with the highest number of the online shoppers identified as being from the 20's age group.

The retail sample showed that of the 67 online shoppers, 24 were in their 20's with none of those aged in their 60's or older having purchased online. The email sample showed even higher levels of agreement, with 111 of the 186 identified online shoppers in the 20's age group and again none of those in the 60's age group having purchased online. These results suggest that the age of the consumer is indeed a key factor influencing the online purchasing decision, necessary for inclusion in the revised model design, and this was reflected in the statistically significant relationship identified in the chi square analysis for the retail sample.

Table 3 Purchased Online & Age Group Crosstabulation – Retail Sample

Count

		Purchased online?		Total
		Yes	No	
Age	<20	6	2	8
Group	20's	24	24	48
	30's	19	32	51
	40's	13	43	56
	50's	5	15	20
	60's	0	10	10
Total		67	126	193

Table 4 Chi Square Results - Purchased Online &amp; Age Group - Retail Sample

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.240(a)	5	.001
Likelihood Ratio	23.156	5	.000
Linear-by-Linear Association	18.287	1	.000
N of Valid Cases	193		

Another possible factor that may influence a consumer's online purchasing decision is the Marital Status of the individual. A survey conducted in 2003 by Nielsen found that married web "surfers" are more likely to purchase online compared to their single counterparts even though single people spend on average more time online (Rush 2003). One possible reason for this is that married shoppers may be more open to the functional aspect of online shopping, especially seen as an advantage for those that have children and may therefore be limited in their use of a traditional retail shopping environment. A noted limitation of categorising the respondents as either married or single is that it may not reflect the complexities of relationships in society today. One example of this is a couple may be in a long term partnership and have children together representing a family unit; however, as they are not legally married they are technically single in status. This was considered when designing the questionnaire but, due to the potential sensitivity issues that may arise when asking participants to clarify their relationship status, it was determined inappropriate to offer a more detailed set of responses.

Results from the questionnaire responses showed that in the email sample although there were a greater number of single online shoppers (129 out of 186 identified online shoppers were single) 94.6% of the married respondents had purchased online compared to 91.5% of the single respondents, as shown in table 5 below.

Table 5 Purchased Online & Marital Status Crosstabulation – Email Sample

Count

		Purchased online?		Total
		Yes	No	
Marital status	Single	129	12	141
	Married	53	3	56
	Divorced	4	1	5
Total		186	16	202

The retail sample however, offered opposing results, as shown below in table 6, with only 19% of its married respondents having purchased online compared to 49% of the single respondents.

Table 6 Purchased Online & Marital Status Crosstabulation – Retail Sample

		Purchased online?		Total
		Yes	No	
Marital status	Single	50	52	102
	Married	15	64	79
	Divorced	2	10	12
Total		67	126	193

These findings emphasise the belief that administrating the questionnaires in both an online and retail environment was essential to fulfil the aims of the research.

In order to determine if the relationship between the marital status of the respondent and if they had purchased online was statistically significant, a chi-squared test was used to analyse the results from both the email and retail sample.

Table 7 Chi Square Results - Purchased Online & Marital Status - Email Sample

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1.572(a)	2	.456
Likelihood Ratio	1.358	2	.507
Linear-by-Linear Association	.013	1	.909
N of Valid Cases	202		

Table 8 Chi Square Results - Purchased Online & Marital Status - Retail Sample

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.556(a)	2	.000
Likelihood Ratio	20.256	2	.000
Linear-by-Linear Association	17.110	1	.000
N of Valid Cases	193		

The analysis results presented in table 8 showed a significance level lower than the 0.05 level required in order to be able to reject the null hypothesis for the retail sample; this meant that there was in fact a significant relationship. However, this was



not found with the analysis of the email sample, as shown in table 7.

### **5.1.2 Educational Factors Affecting Perceived Trustworthiness**

A key issue for the research study was to identify the impact information has on the individuals' perceived trustworthiness of not only the website but the Internet as a medium. One area of interest was to determine if the level of education achieved by the individual was correlated with their willingness to purchase online. This was a particularly interesting area to investigate as no previous studies could be found on this topic.

The results from the retail administered questionnaires showed that the highest number of respondents left education after High School. A full breakdown of the responses is presented in table 9 below.

Table 9 Purchased Online & Education Level Crosstabulation - Retail Sample

		Purchased online?		Total
		Yes	No	
Level of	Secondary	6	27	33
education	High School	30	57	87
	Uni	31	42	73
Total		67	126	193

Of those respondents that did continue in education to University level, 42.5% had purchased online. This figure was slightly higher than the 34.5% of High School educated respondents that had purchased online. The number of Secondary School educated respondents that had purchased online was considerably lower at only 18.2%.

As expected, the email sample consisted mostly of higher educated individuals with 88% of respondents being at university level and above. This was due to the fact that the questionnaire was distributed electronically to university students and staff as part of the sample selection, and so the remaining 12% were made up of administration staff within the university departments. The results presented in table 10 show that 92.7% of the university educated respondents had purchased online compared to the 88.2% and 87.5% of respondents educated to high school and secondary school respectively.

Table 10 Purchased Online & Education Level Crosstabulation - Email Sample

		Purchased online?		Total
		Yes	No	
Level of education	Secondary	7	1	8
	High School	15	2	17
	Uni	80	8	88
	PG	84	5	89
Total		186	16	202

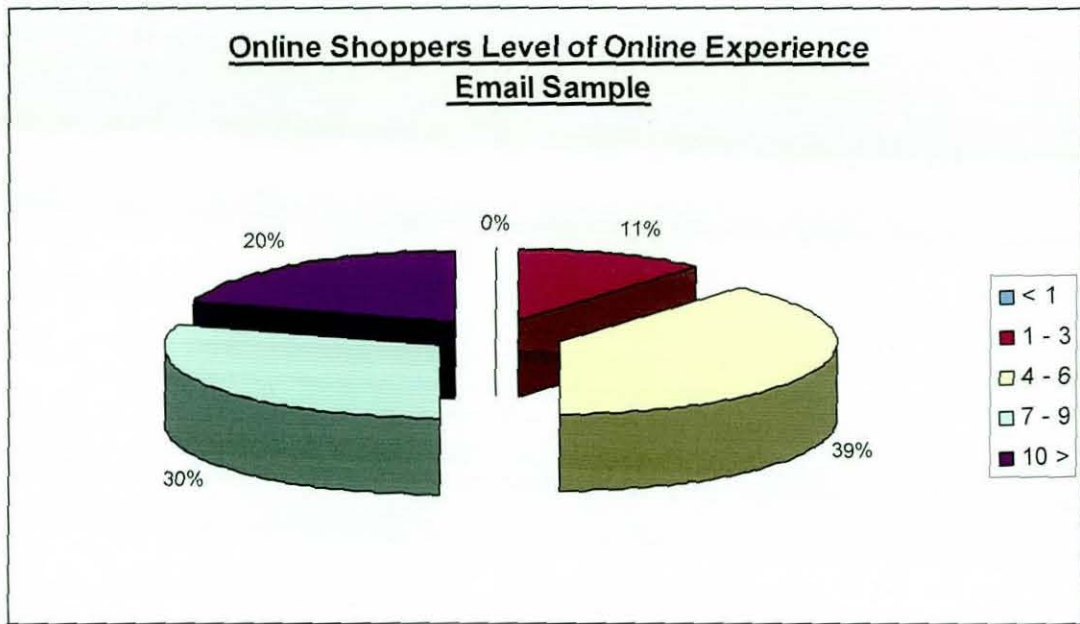
These findings seem to suggest that staying in education longer can have a positive affect on a consumer's decision later in life to purchase online. One possible explanation could be that students are exposed more to computers in higher education and become more comfortable going online. This theory was strengthened by the findings that the number of respondents that claimed to have learnt to use the Internet in school or college increased with the level of education they achieved. These findings were consistent from both samples and suggest that students had been taught

about computers and the Internet in the later stages of their education. Those students who left education at the lower levels were therefore not as confident with computers and so were less likely to become online shoppers.

As the results seem to suggest that the more educated an individual is and therefore, the more experience they have had with computers and the Internet in general, the more likely they are to purchase online, the responses were analysed to determine if it was the level of online experience the individual has that affects the purchasing decision.

The research findings from the email sample did not support this theory, with the highest number of online shoppers, 39%, having only 4 – 6 years of online experience, see figure 12, compared to 20% of those that had ten years or more experience online. However, this may be due to the fact that as previously established, the majority of online shoppers are aged in their 20's and so would naturally have been able to gain less years experience online compared to that of a person aged in their 30's – 40's.

Fig.12 Online Shoppers' Level of Online Experience - E-mail Sample



The retail sample findings showed that the highest number of online shoppers to be in the 4 – 6 year’s online experience category, 48% compared to only 12% with ten years or more experience. The results are displayed below in figure 13.

Fig.13 Online Shoppers' Level of Online Experience - Retail Sample



In order to determine if the number of year's online experience correlated with the propensity to shop online, statistical analysis was carried out on the data from both samples. The findings from the statistical analysis from both samples are presented in the tables below.

Table 11 Chi Square Results - Purchased Online & Number of Year's Experience - Retail Sample

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.682(a)	4	.000
Likelihood Ratio	58.362	4	.000
Linear-by-Linear Association	29.473	1	.000
N of Valid Cases	193		

Table 12 Chi Square Results - Purchased Online & Number of Year's Experience - Email Sample

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.675(a)	4	.002
Likelihood Ratio	10.146	4	.038
Linear-by-Linear Association	3.711	1	.054
N of Valid Cases	202		

As the results from both samples were shown to have a significance level of less than the 0.05 level needed to reject the null hypothesis, it was apparent that there was in

fact a statistically significant relationship between the number of years experience online for the identified online shoppers. This result suggests that the factor of online experience was necessary for inclusion in the revised model of trust design, however, the relationship will be difficult to express in the model due to it not being reflective of a general increase or decrease in the number of years experience, and so will need to be discussed further in chapter 10.

### **5.2 General Attitudes to Shopping**

One area overlooked in previous research is the notion that some consumers view shopping as a chore and therefore, it is not the idea of shopping online that is the issue for them, but the process of shopping itself. Figures 14 and 15 below summarises the results.

Fig. 14 Non-Online Shoppers' Enjoyment of Shopping - Retail Sample



As expected, the majority of respondents from the retail sample identified as online shoppers, 68.7%, claimed that they enjoy shopping most of the time. Of those identified as non online shoppers, 61.1% said they enjoy shopping most of the time.

Similarly, a high number of the email sample enjoyed shopping with 44.1% of the online shoppers enjoying it most of the time, however, of those that had not purchased online, a majority of 62.5% still claimed to enjoy shopping most of the time.

Fig.15 Non-Online Shoppers' Enjoyment of Shopping - Email Sample



These findings suggest that the majority of the respondents would be classed as “Enthusiast Shoppers” as previously defined by Cuthbert (Olavsrud 2003), and therefore it is not a lack of enjoyment in the shopping process as a whole that is preventing them from purchasing online, as reflected in the figures above, but another deterrent.

In order to determine why consumers have been reluctant to switch from High Street shopping to online shopping, it was important to identify what consumers feel is the most important aspect of the experience for them. This would also show if the aspects identified as most important are unavailable online, thus preventing the transition to online purchasing. The two sets of data gave different findings. The retail sample results showed that of the respondents that had purchased online, 30% viewed Customer Service as most important. In contrast, the email sample preferred seeing the tangible product with 30% of respondents identifying that as the most important aspect. However, this view did not seem to prevent them from purchasing online, with 93% of these respondents claiming they have purchased online.

Fig.16 Most Important Aspect of High Street Shopping Process - Retail Sample

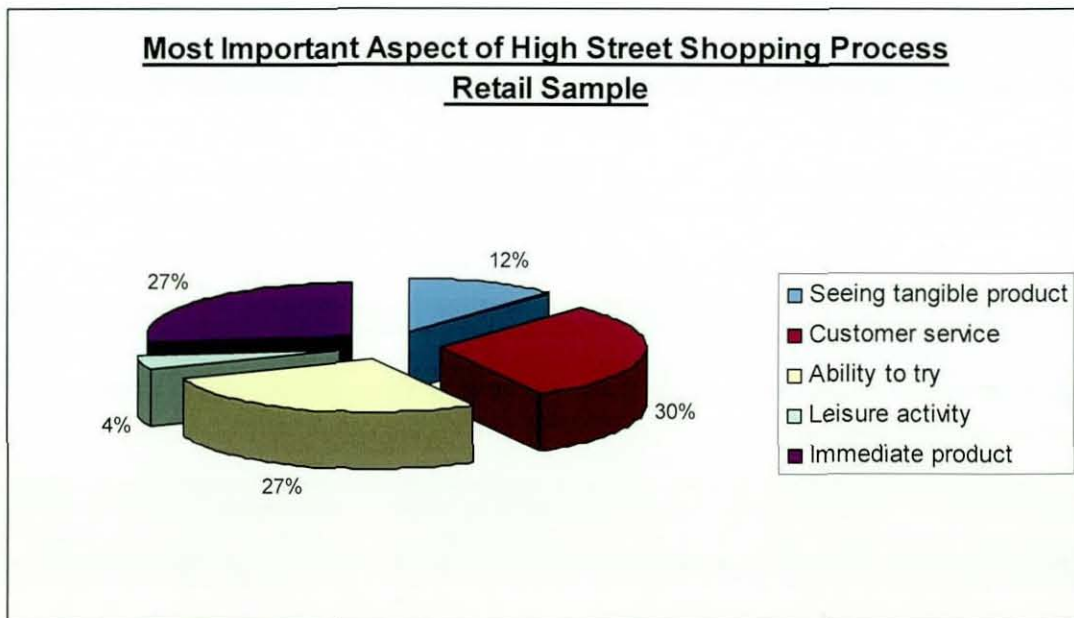




Fig.17 Respondents who had purchased online but identified seeing the tangible product as most important in the High Street Shopping Process - Email Sample



These findings show that although both sets of respondents chose aspects of the shopping process that are unavailable online as the most important, this does not appear to be an influencing factor in their purchasing decision, as in both samples a substantial number had still purchased online. To understand these results, the respondents' view of what is the worst aspect of the shopping process was also analysed.

The findings showed that for the retail sample, the worst aspect of shopping was the crowds. This accounted for the biggest single group of the respondents, regardless of if they had shopped online or not, with 46% and 40% respectively. The email results supported these findings, with 43% of online shoppers identifying crowds as the worst aspect of shopping and 56% of non online shoppers. This suggests online businesses

should promote as one of the benefits of online shopping the removal of such social annoyances as Crowds. This could be an important factor to use when marketing an online store to consumers. Interestingly, both sets of respondents showed that the majority would go online to look, if their favourite high street store were to create a website, with 94% of the email respondents and 61% of the retail respondents taking this view. This was unsurprising for the email respondents who obviously use the Internet for communication. To determine if the difference between the email sample and retail sample results was statistically significant, chi squared analysis was used and the result, as presented in table 13 below, shows that a significance level of less than 0.05% was achieved, determining that there was in fact a significant statistical difference found between the two samples.

Table 13 Chi Square Results - Data set & Purchased Online

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	31.998(b)	1	.000		
Continuity Correction(a)	30.714	1	.000		
Likelihood Ratio	32.862	1	.000		
Fisher's Exact Test				.000	.000
Linear-by-Linear Association	31.917	1	.000		
N of Valid Cases	395				

### 5.3 Opinions of Current Internet Users

The initial survey findings discovered that there was a statistical difference between the number of people from the email sample of respondents that had purchased online compared to those from the retail sample. This presents the view that people, who are confident using the Internet for activities such as email, are more confident when it comes to purchasing online as they are more familiar with the technology and therefore more trusting of it. In order to determine if this was in fact correct, the results were analysed to determine the opinions of online shopping of those using the Internet.

#### 5.3.1 Internet Usage Figures

Unsurprisingly, a large percentage of the retail sample respondents did not regularly use the Internet, with 29% claiming they never go online and therefore had never purchased online.

Fig.18 Amount of Hours a Week Spent Online - Retail Sample

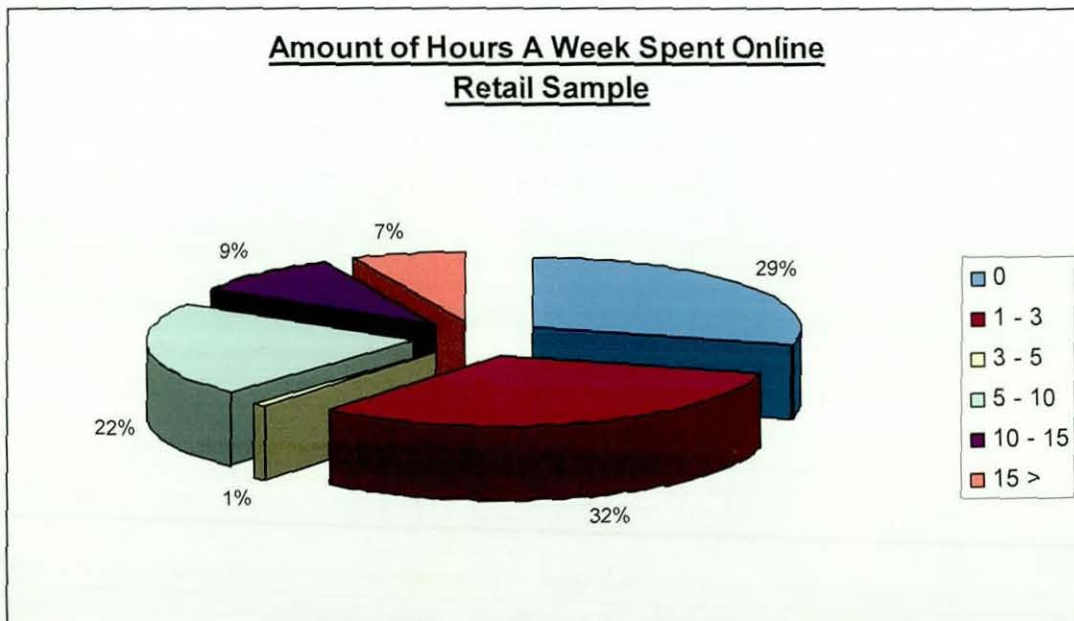
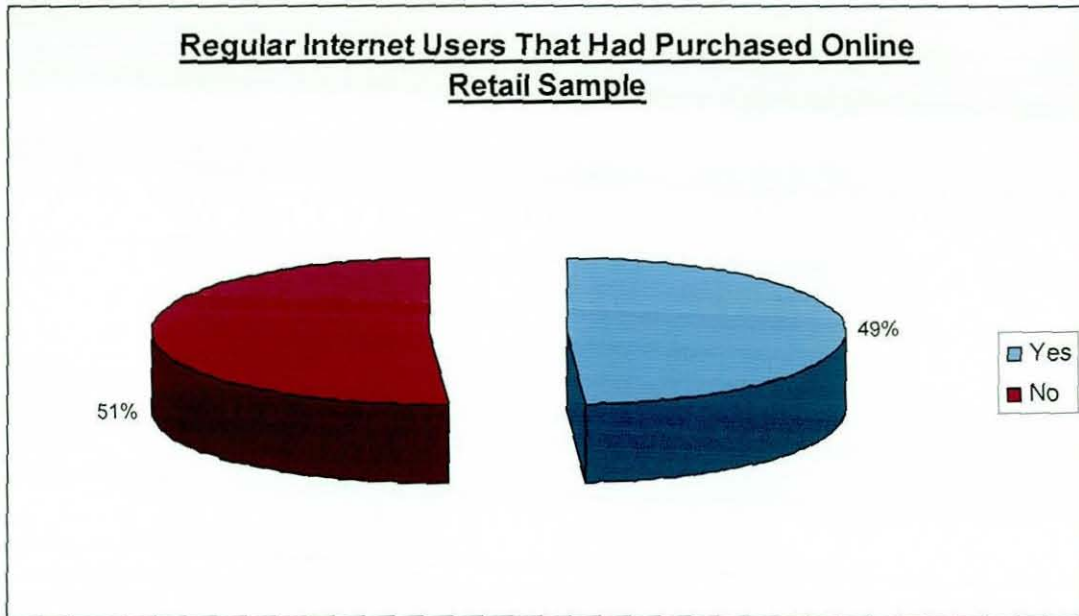


Fig.19 Regular Internet Users That Had Purchase Online - Retail Sample



However, the majority of the retail sample respondents did go online regularly, with 31.6% spending on average between 1 and 3 hours a week online. A further 22.3% spent between 5 and 10 hours a week online.

Of those respondents that do regularly use the Internet, 51% have not yet purchased online. Even those spending up to 10 hours a week online are still not shopping online.

It was therefore considered important to distinguish between those who have been online but had never shopped online and those that had been online and have also shopped online, these figures are presented for comparison in the crosstabulation table provided below.

Table 14 Purchased Online &amp; Hours Weekly Internet Use Crosstabulation - Retail Sample

		Purchased online?		Total
		Yes	No	
How many	None	0	56	56
hours online?	1-3	23	38	61
	3-5	0	2	2
	5-10	25	18	43
	10-15	10	8	18
	15>	9	4	13
Total		67	126	193

The table above shows that 137 of the 193 retail sample respondents stated they had been online, and 67 of these had shopped online compared to 70 that had not. This result seems to suggest that as there was not a noteworthy difference between the figures for the online and non online shoppers for the retail sample, more hours spent online does not necessarily mean more online shoppers.

As anticipated, the email sample was made up of regular Internet users, with the majority of respondents selecting the maximum option of over 15 hours a week online as the most representative of their Internet usage. However, an interesting result was that even in this sample of heavy Internet users, 8% had still not yet purchased online, as shown in figure 21.

Fig.20 Amount of Hours a Week Spent Online - Email Sample

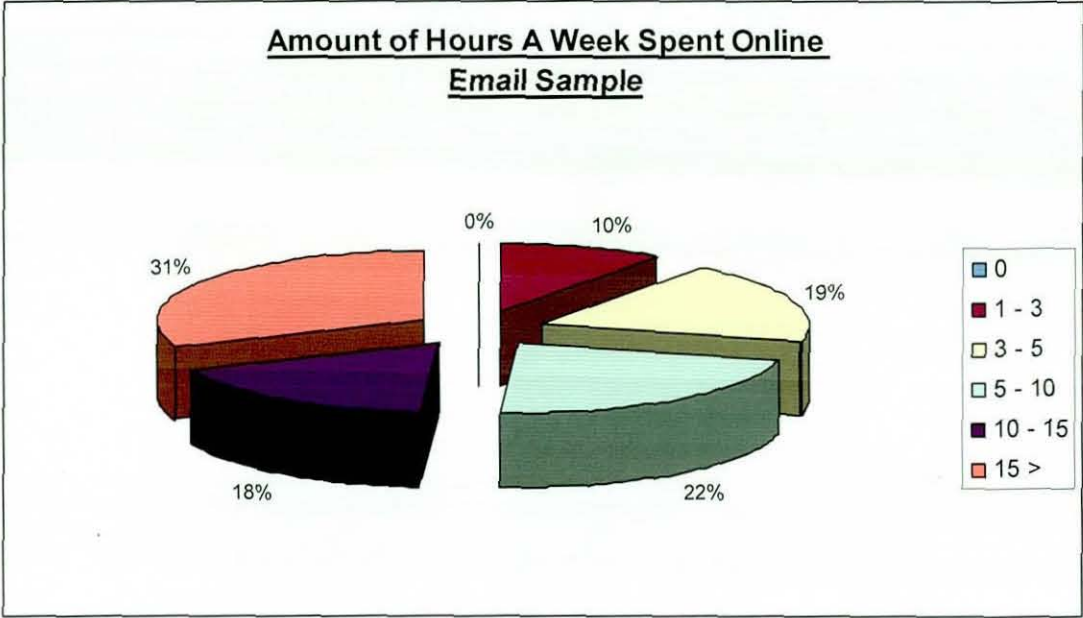
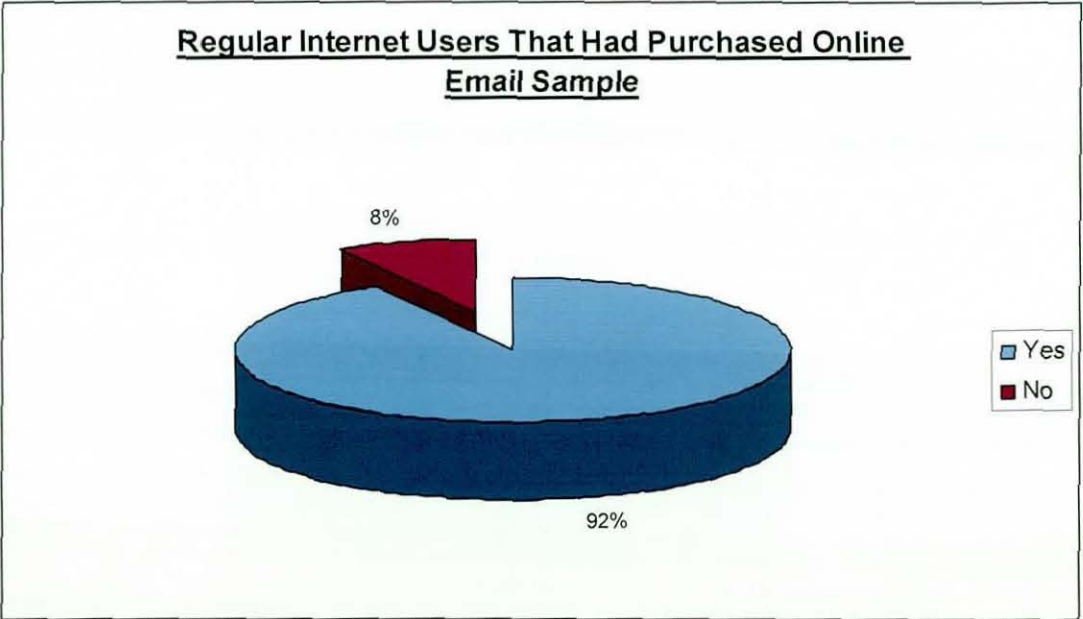


Fig.21 Regular Internet Users That Had Purchased Online - Email Sample



This supports the findings from the retail sample results that more hours spent online does not necessarily mean more online shoppers.

**5.3.2 Respondents' Activities Online**

The next stage of the analysis was therefore to determine what the respondents main uses of the Internet were and if online shopping has yet become one of these activities.

Fig.22 Most Common Uses of Internet - Email sample

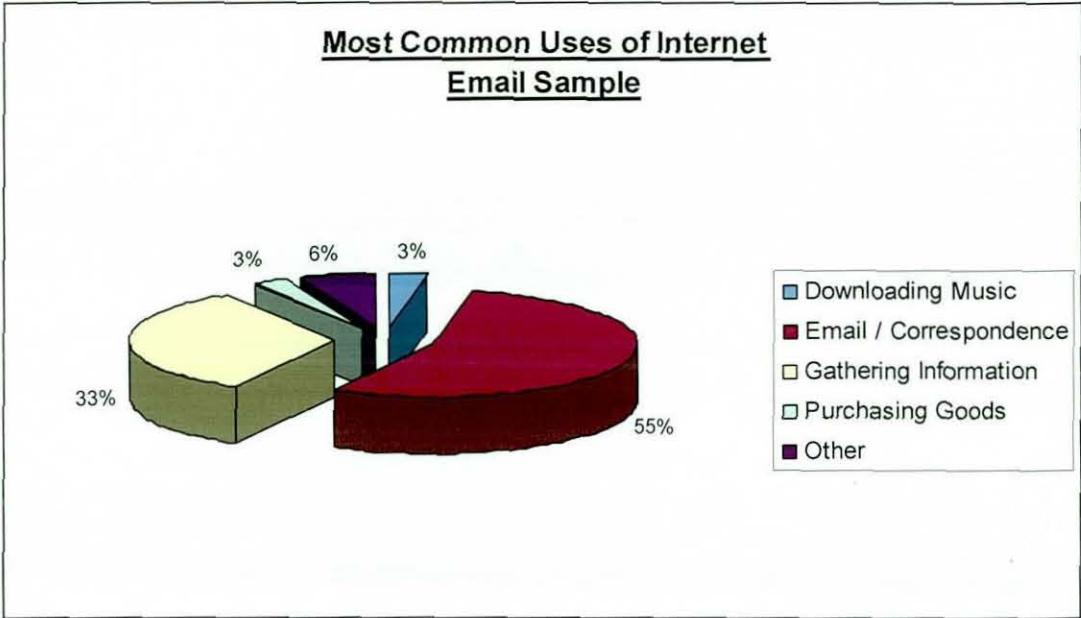
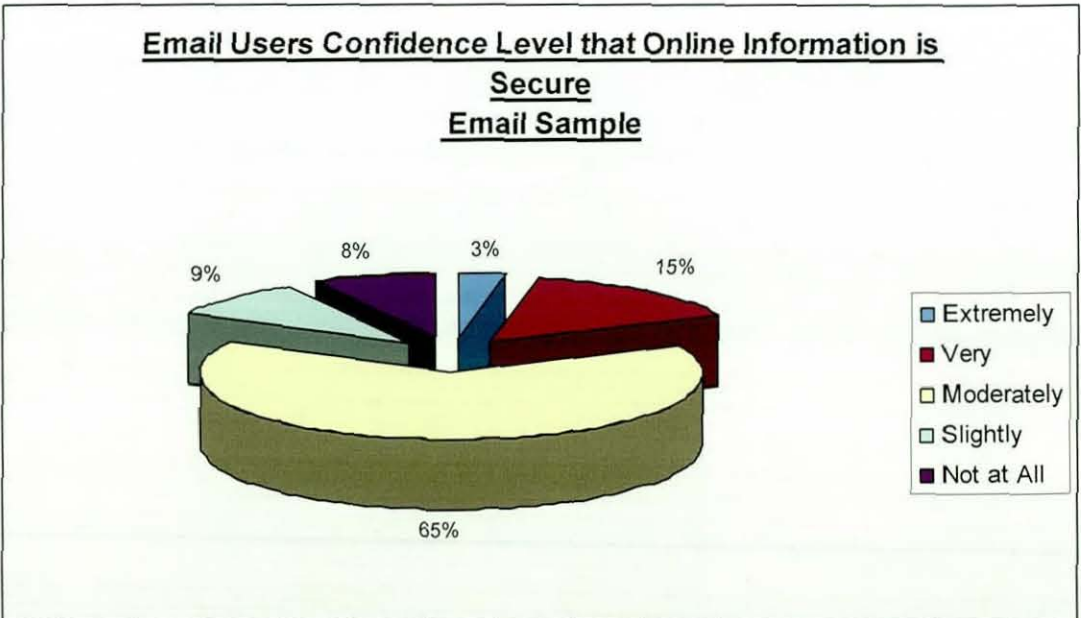


Fig.23 Email Users Confidence Level That Online Information is Secure - Email Sample

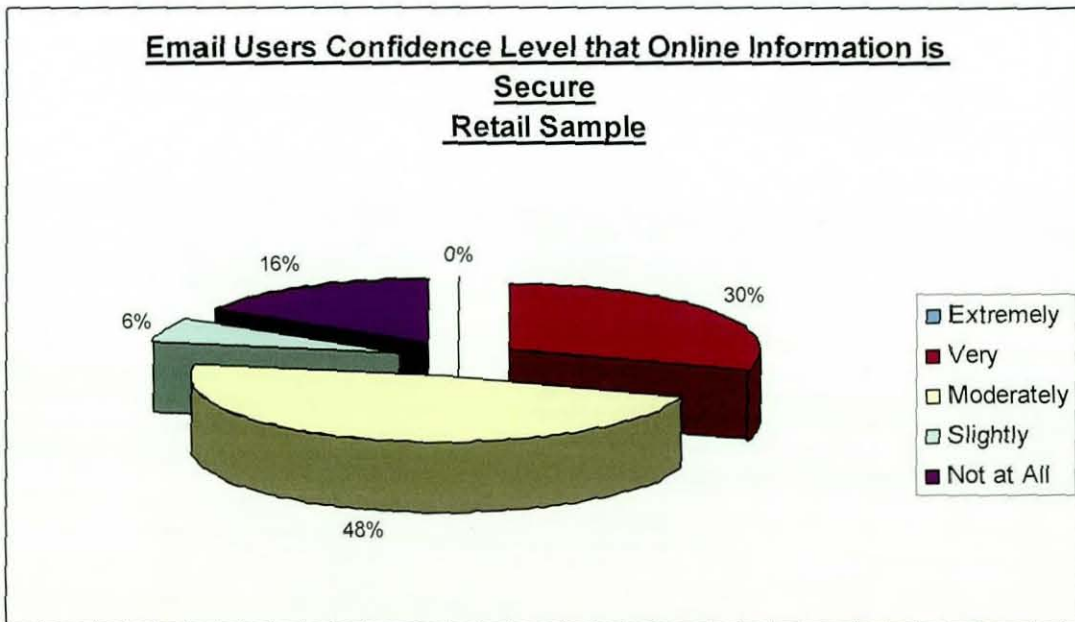


Findings from the email sample showed the most common use of the Internet was email, with 55% of respondents saying that this was their primary use, as shown in figure 22.

The results presented in figure 23 showed that of those respondents who used the Internet for Email, only 3% were extremely confident that the information they gave online is secure compared to the 65% that only felt it was moderately secure.

The results from the retail sample mirror these findings. The most common use of the Internet was email with 57% of responses, and of those respondents, 48% felt that they were only moderately confident their details were secure.

Fig.24 Email Users Confidence Level that Online Information is Secure - Retail Sample

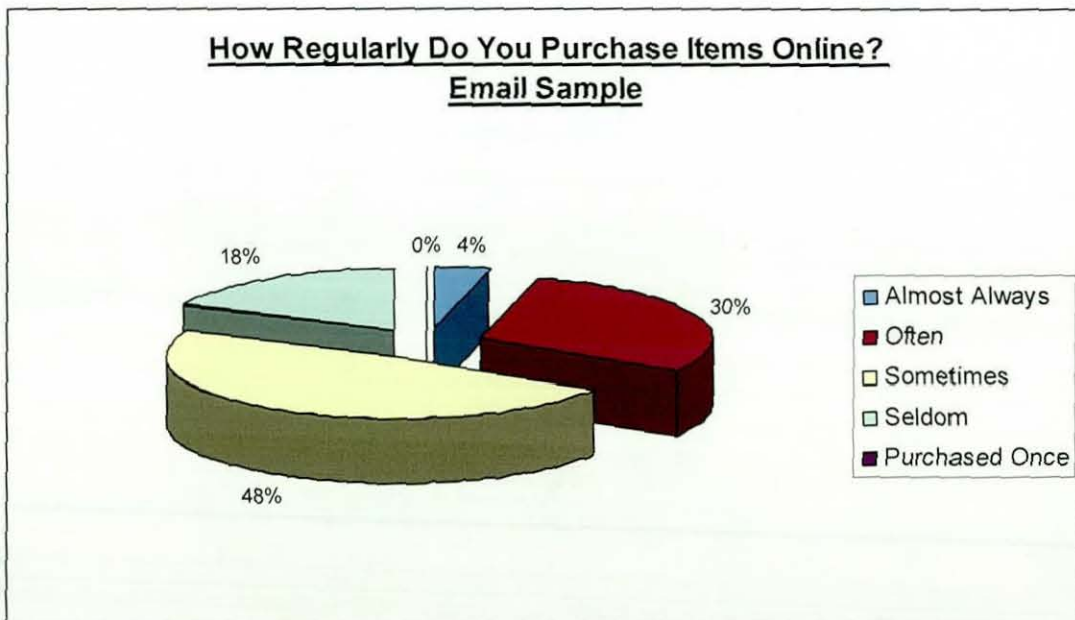




#### 5.4 Opinions of Online Shoppers

To determine what makes consumers choose to purchase online, it was considered essential to investigate the opinions of those who have purchased online. Through examination of their online experiences and responses, patterns emerged that highlighted what factors positively influence their online purchasing decision. The focus for the next stage of the results analysis was on the respondents that were identified as online shoppers. As previously noted, the email sample consisted of a statistically significant higher number of online shoppers than the retail sample, so the samples had to be analysed independently and then compared. The email sample included 186 online shoppers. Within this group, only 4% of respondents would describe themselves as almost always purchasing online, and the largest percentage (48%) claimed they shopped online sometimes. None of the respondents had only purchased once and so presumably had found the experience positive enough to repeat it.

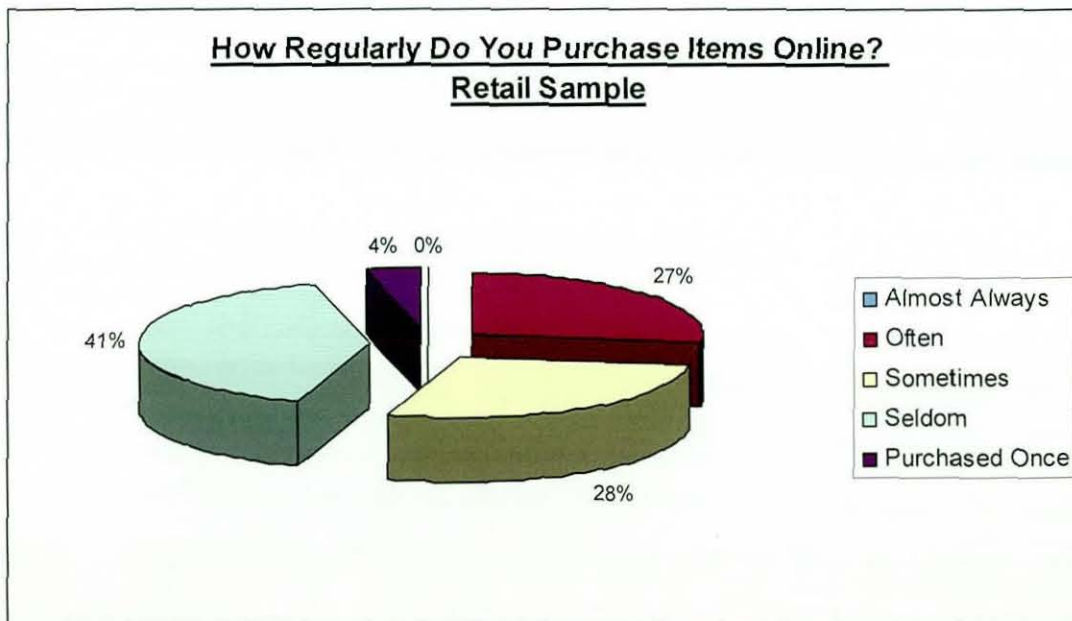
Fig.25 How Regularly they Purchase Items Online - Email Sample



The retail sample did not reflect this trend; however, out of the 67 online shoppers in the sample, none described themselves as purchasing online almost always. The largest percentage stated they seldom shopped online, suggesting considerably less regular purchasing patterns, with 4% only purchasing online once.

The results from the two samples also differed with regard to what items the respondents were most likely to purchase, the email sample favouring books compared to the retail sample purchasing more entertainment items such as CD's and DVD's online. Both samples identified small ticket items as most likely to be purchased online.

Fig.26 How Regularly they Purchase Online - Retail Sample



To gauge a more general opinion on the online shopping process, the respondents were asked to rate the level of service they have received when purchasing items online. This not only showed what levels of customer service consumers were

receiving online, but indicated whether the shoppers had positive or negative online experiences.

The responses showed that overall the level of service received online was considered to be good. The retail sample gave a slightly unexpected result as of the three shoppers identified as only purchasing online once, two claimed to have received very good or good service. The remaining respondent was the only person in the entire retail sample who complained of poor service.

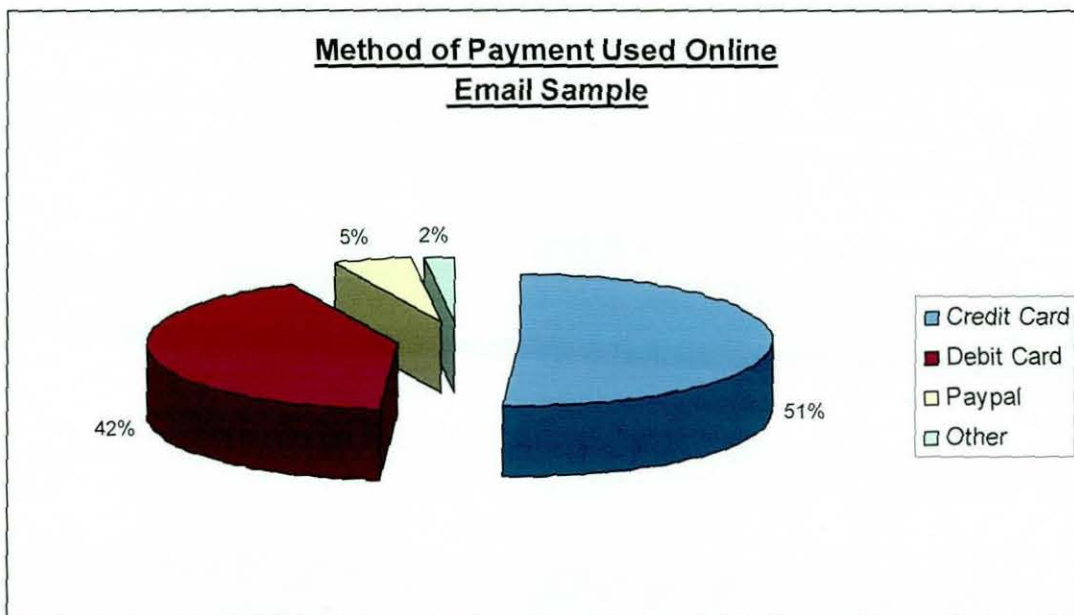
Similar figures were found from the email sample, with 83% of respondents stating they received good or very good service online and only 1% reported poor service.

The results indicate that for the consumers that purchased online, the level of service they received was consistently good. This is an important result, especially in light of the retail respondents' previous statement that customer service was the most important aspect of shopping to them. These results indicate that customer service issues are unlikely to be a major barrier to e-commerce.

One previously identified deterrent from the literature review findings was the issue of payment online, more specifically the need to give card details to online retailers over the internet. Investigation of the online shopper respondents' method of payment showed that the shoppers in this study mainly use their credit cards to purchase goods online: 51% of the email sample respondents used their credit card to pay for purchases online, compared to 42% who preferred to use their debit cards. Only 7% used another form of payment method, with Paypal users accounting for 5%.

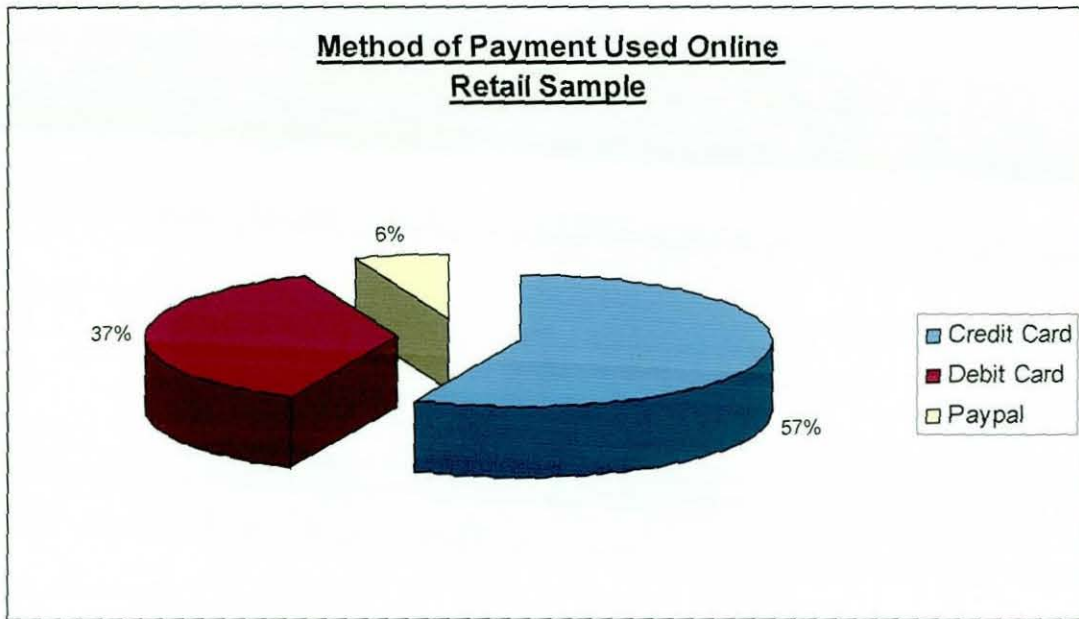
The retail sample showed similar figures with 53% of respondents using their credit cards, compared to 35% who used debit cards to pay for items purchased. Interestingly those shoppers who described themselves as almost always shopping online showed a more even distribution, with 57% who purchased with credit cards and 37% who preferred to use a debit card. The only other method of payment was Paypal, which made up the final 6%.

Fig.27 Method of Payment Used Online - Email Sample



Paypal is an online payment provider that handles around 200,000 online transactions a day (Wilson 2002). Although the largest of its kind, Paypal has yet to receive widespread acceptance from online shoppers. When asked if they had ever used Paypal to pay for goods online, 58% of the email sample respondents stated they had never used Paypal, the retail sample had a larger majority as 75% of respondents said they had not used it.

Fig.28 Method of Payment Used Online - Retail Sample



Paypal has been successful on the EBay website, becoming the payment method of choice for most of the online traders. EBay along with fellow E-brand Amazon, have established themselves as reputable online businesses and through this have seen their sales revenue increase dramatically in recent years. This was reflected in the research findings, as Amazon was the most popular website for the email sample with 39% and EBay was voted second with 13%. The retail sample saw a reversal of the email sample results with EBay getting 40% of responses, as identified in figures 29 and 30 below. However, the second most popular was Play.com, an online retailer specialising in DVD's, with 26% of responses. This reflects previous results from the retail sample that showed the majority of items purchased were entertainment based.

Fig.29 Most Popular Shopping Websites - Email Sample

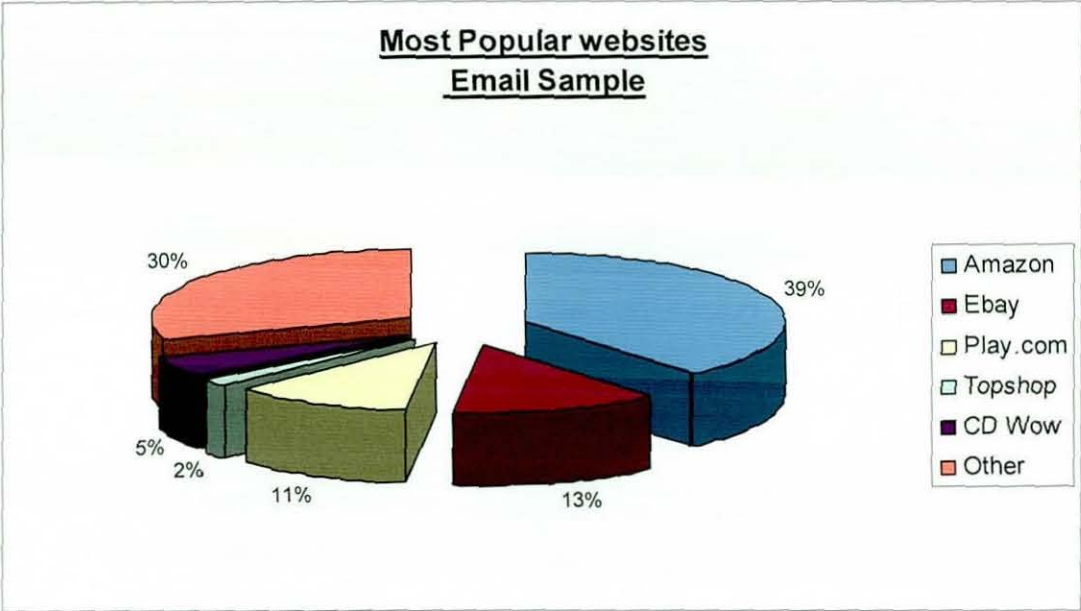
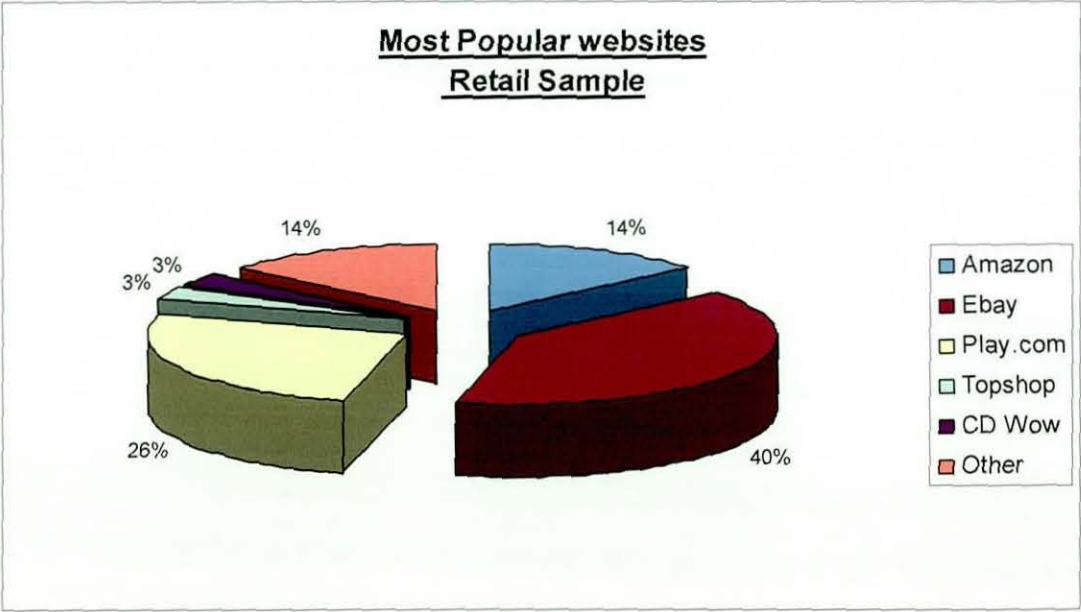


Fig.30 Most Popular Shopping Websites - Retail Sample



### **5.5 Identifying Deterrents to Online Shopping**

The survey findings were then used to determine the main deterrent to online shopping. To achieve this, two approaches were taken. The results were analysed and compared for both sets of data, with the main variable being if the respondent had purchased online or not. Also, previous research findings including suggestions of the main deterrents to online purchasing were evaluated and compared to the findings from the questionnaire responses.

Accessibility is an obvious barrier to e-commerce. Without access to a computer and an Internet connection, online shopping is impossible. Although this was once a major barrier for B2C e-commerce, the reduction in costs of personal computers and Internet service provider charges have seen a dramatic increase in the number of households in the UK that now contain at least one computer connected to the Internet. Respondents were asked if they had regular access to the Internet either at home or at work. Results from the email sample showed that of those that had purchased online, 99% had regular access to the Internet, with 61% of respondents being able to go online at home and at work.

Similar findings were discovered from those that had not yet purchased online, with 100% of respondents having regular access to the Internet, with 56%, reporting access just at home.

Fig.31 Internet Access for Online Shoppers' - Email Sample

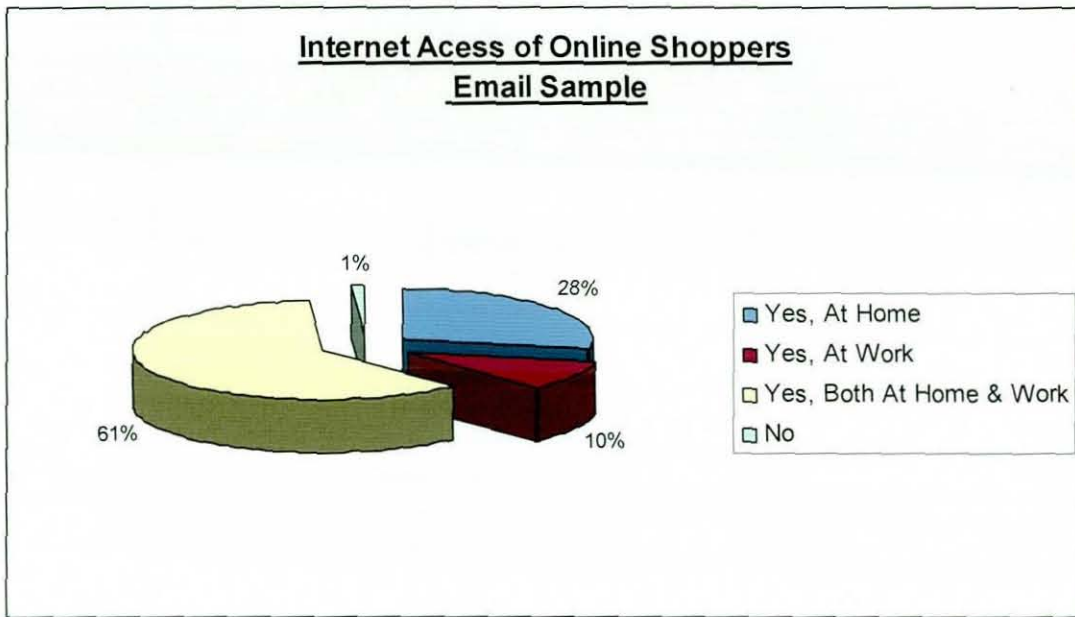
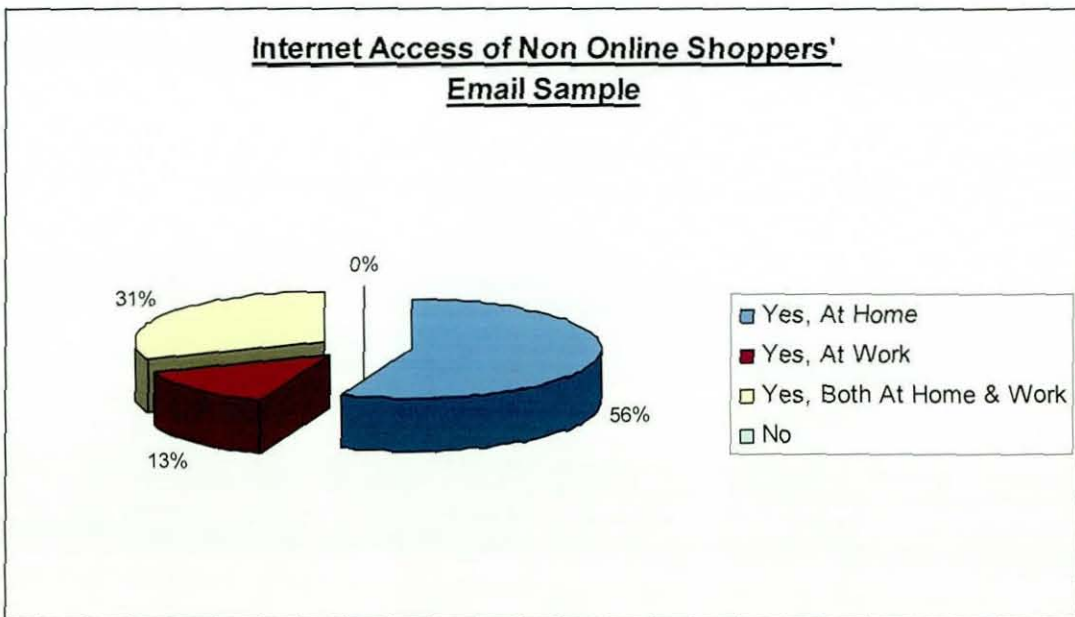


Fig.32 Internet Access for Non- Online Shoppers - Email Sample



The figures were consistent with the findings from the retail sample as 100% of online shoppers stated they had regular access to the Internet, and a large proportion of had access at both home and work.



Fig.33 Internet Access for Online Shoppers' - Retail Sample

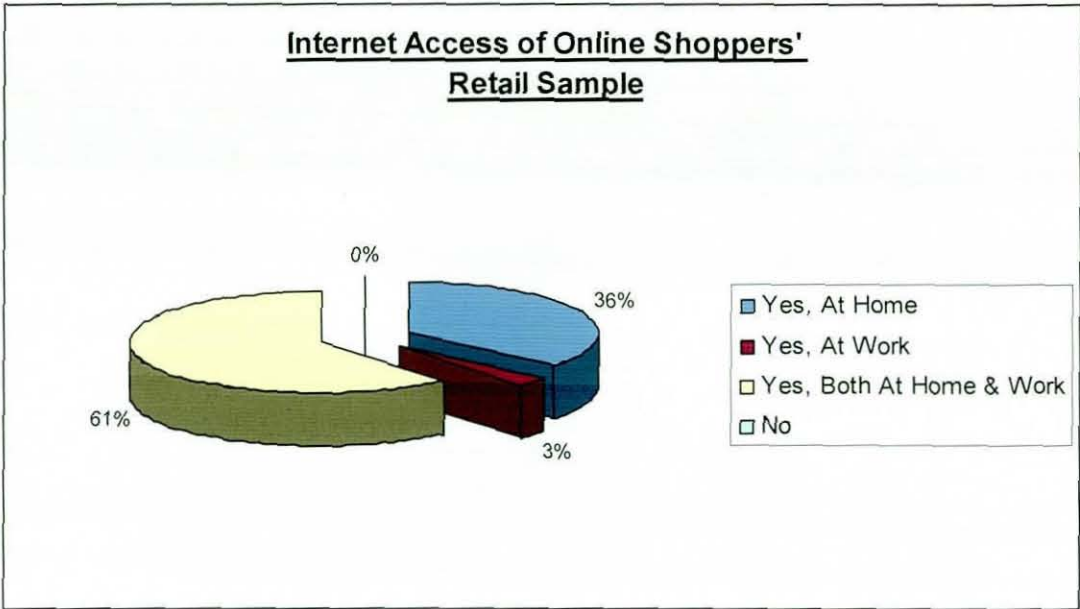
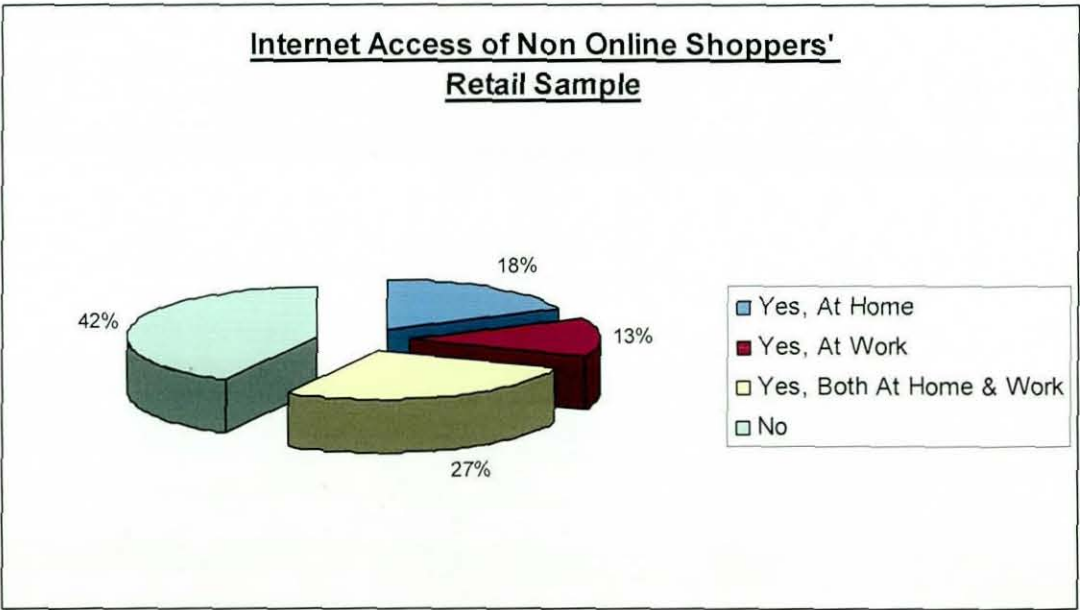


Fig.34 Internet Access for Non- Online Shoppers - Retail Sample



The lowest accessibility results were those of the non online shoppers from the retail sample. A majority of 58% had regular Internet access, with a large proportion having access both at home and work. However, with 42% the largest group of respondents

had no access at all, which contrasted greatly with the other findings from the study.

Clearly accessibility is not the main barrier to e-commerce as there were high numbers of respondents who had regular access to the Internet yet still chose not to purchase online. The validity of these results is strengthened by the findings of Chen, published in 2000, who concluded that accessibility is no longer a barrier to e-commerce as in the U.K alone there were over 18 million adults that had access to the Internet and were yet to purchase online (Chen 2002, p.706). This statistic strongly supports the research findings that it is a different barrier that is preventing people from purchasing online.

The issue of whether consumers' fear of technology and the subsequent perceived difficulty of making a purchase online is a deterrent has attracted little attention previously. This is of particular relevance to the study as it is concerned with the consumers' confidence in their own capabilities and the information they possess. This could be linked to the findings that the higher the level of education achieved by the individual, the more confident they appear to be with computers and that they possess the knowledge to make a purchase online, resulting in them being more likely to become online shoppers.

The survey respondents were asked to rate the level of difficulty they perceived in making a purchase online. The responses showed that overall, regardless of if the respondent had purchased online or not, making an online purchase was not perceived to be a difficult task.

Fig.35 Perceived Level of Difficulty Making an Online Purchase for Online Shoppers - Email Sample

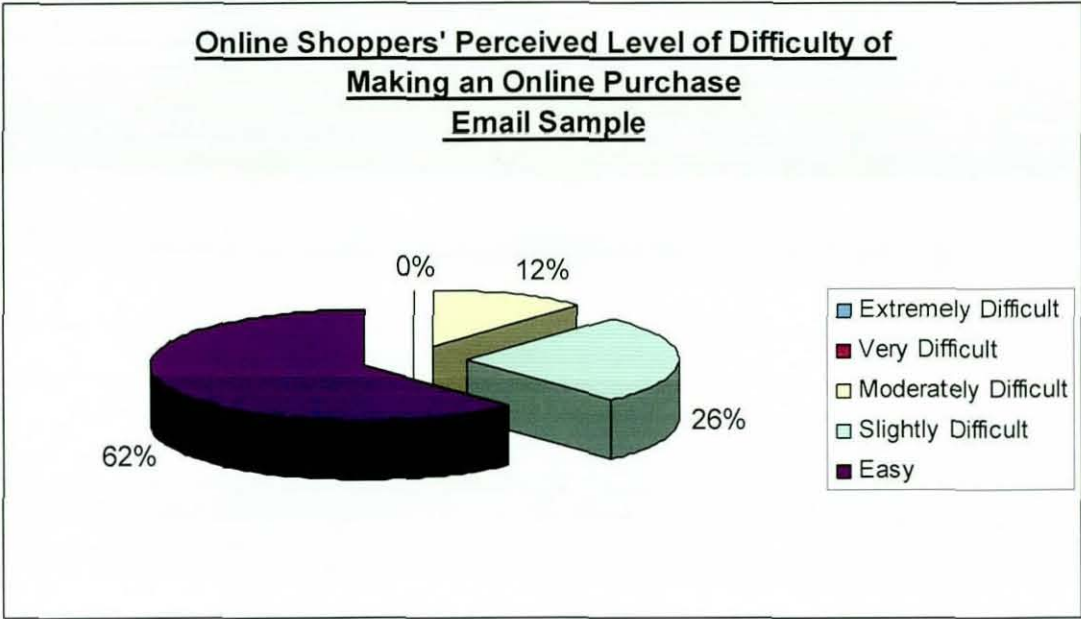
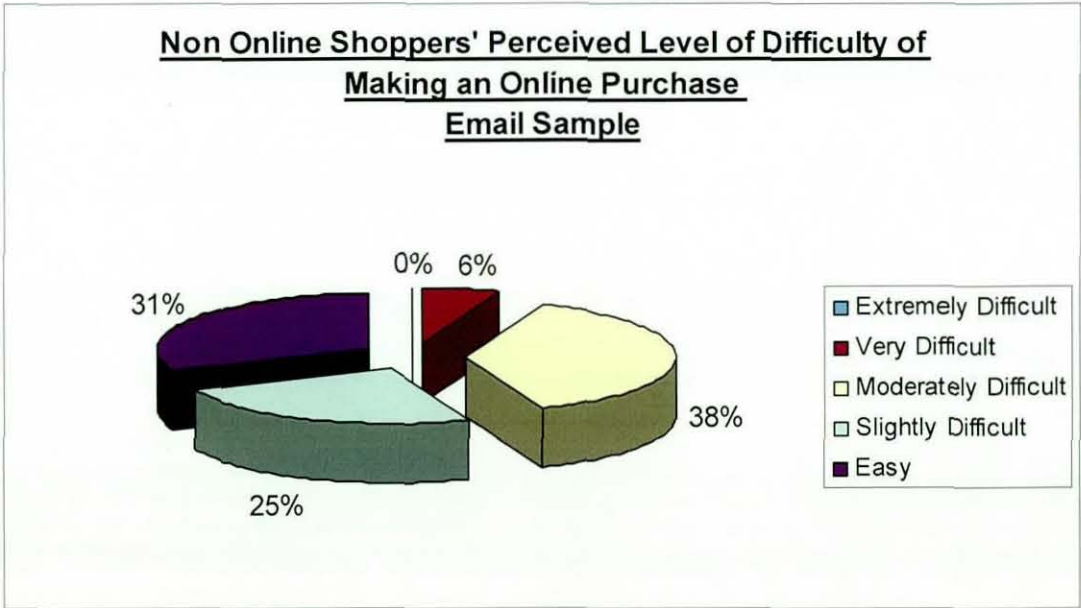


Fig.36 Perceived Level of Difficulty Making an Online Purchase for Non-Online Shoppers - Email Sample

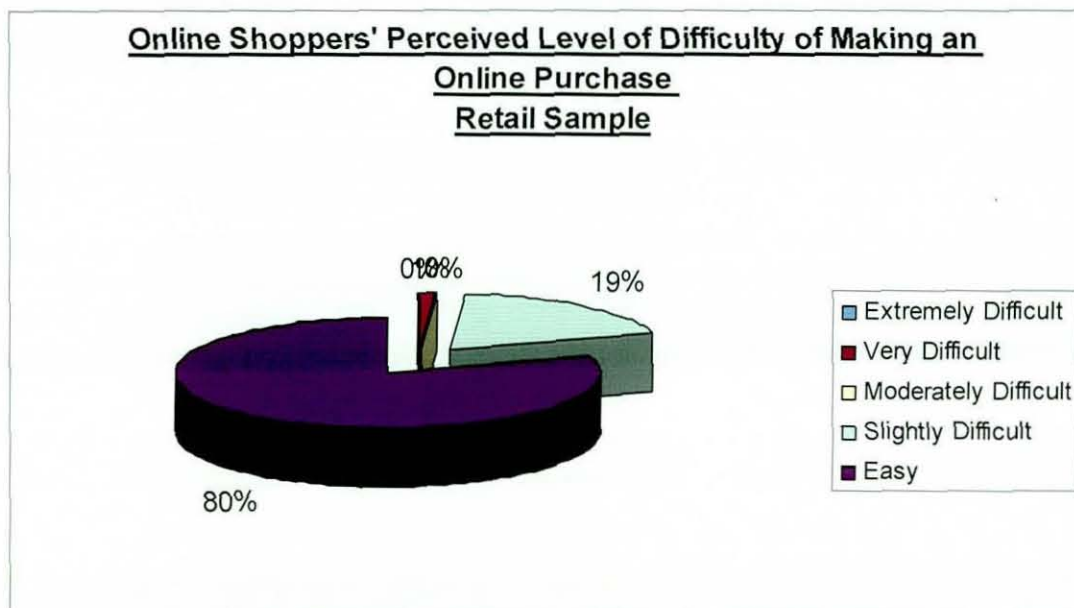


Over 60% of the email sample who had purchased online described it as easy and within that group, none believed it to be above moderately difficult. The non online

shoppers gave similar responses, with only 6% of the respondents claiming they felt that it would be very difficult to make a purchase online. The majority of the respondents agreed that it would not be difficult to make a purchase online, and 56% of responses were that of either easy or slightly difficult.

The retail sample results showed almost identical findings, with 80% perceiving it to be easy to make a purchase online.

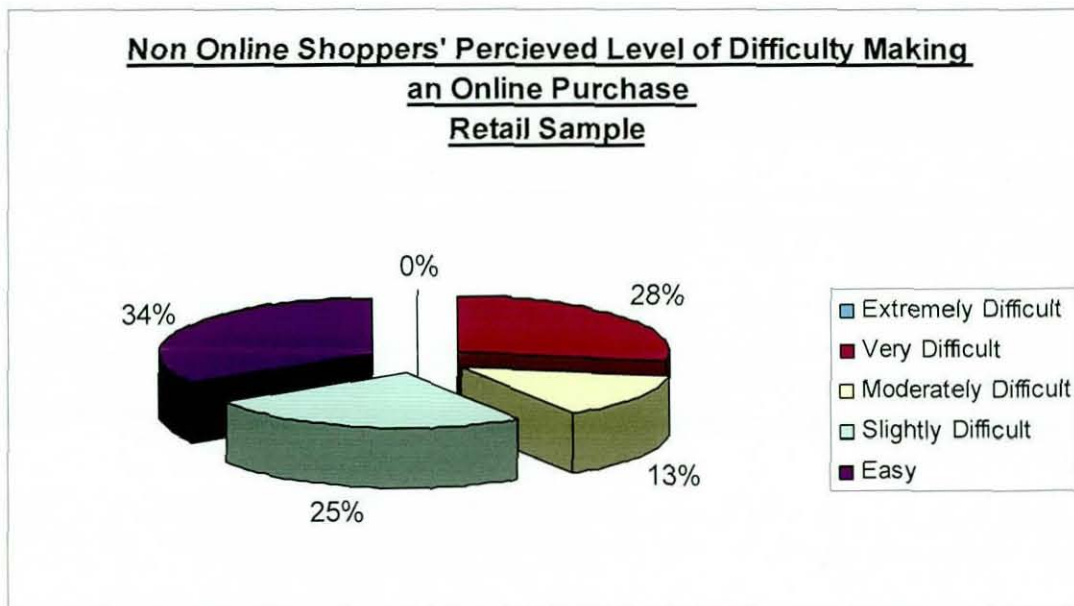
Fig.37 Perceived Level of Difficulty Making an Online Purchase for Online Shoppers' - Retail Sample



However, the non online shoppers showed different results compared to the email sample findings as although the majority still perceived the difficulty level to be low, with 59% labelling making a purchase online as either being easy or slightly difficult, a much larger percentage of respondents, 28%, stated that they felt it would be very difficult for them to make a purchase online.

Despite some variations in the results it is clear that the perceived level of difficulty of making a purchase online was not a major barrier to B2C e-commerce. The majority of all respondents felt it was not a difficult task and even those who had not yet purchased online felt confident they could complete the process.

Fig.38 Perceived Level of Difficulty Making an Online Purchase for Non- Online Shoppers' - Retail Sample



As the results established that two barriers of e-commerce, accessibility and perceived level of difficulty of making a purchase online, as suggested in previous research findings were not the main deterrent to online purchasing, the most direct way to ascertain what is the main deterrent, was to ask the respondents to identify what they perceived it to be. The results from both samples were identical: the main deterrent to online shopping was identified to be security concerns. They were identified as the biggest deterrent by 48% of the retail sample respondents who had purchased online.

Fig.39 Biggest Deterrent to Online Shopping for Online Shoppers - Retail Sample

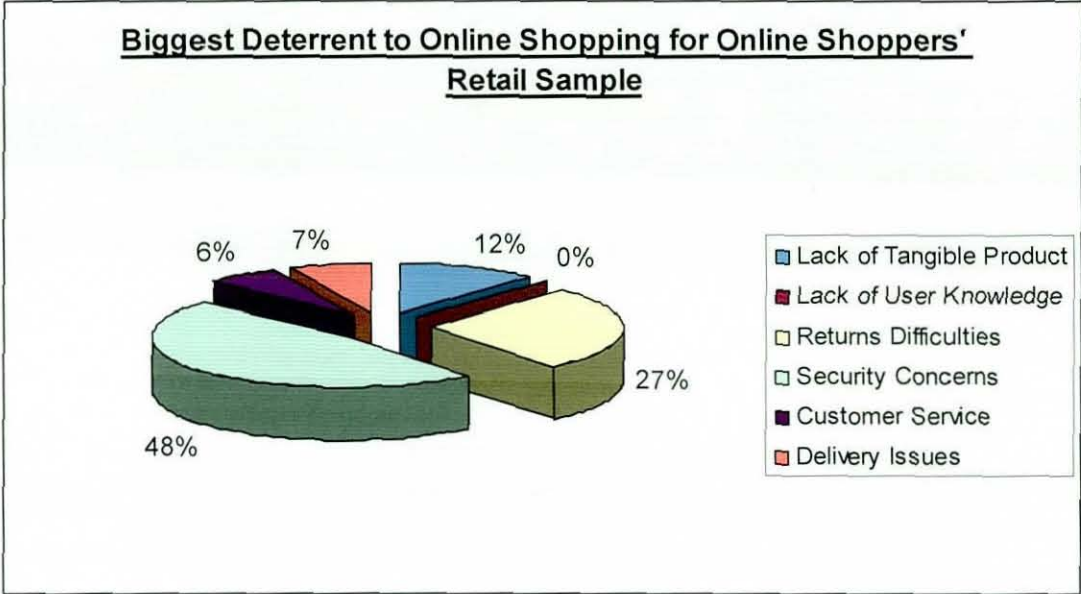
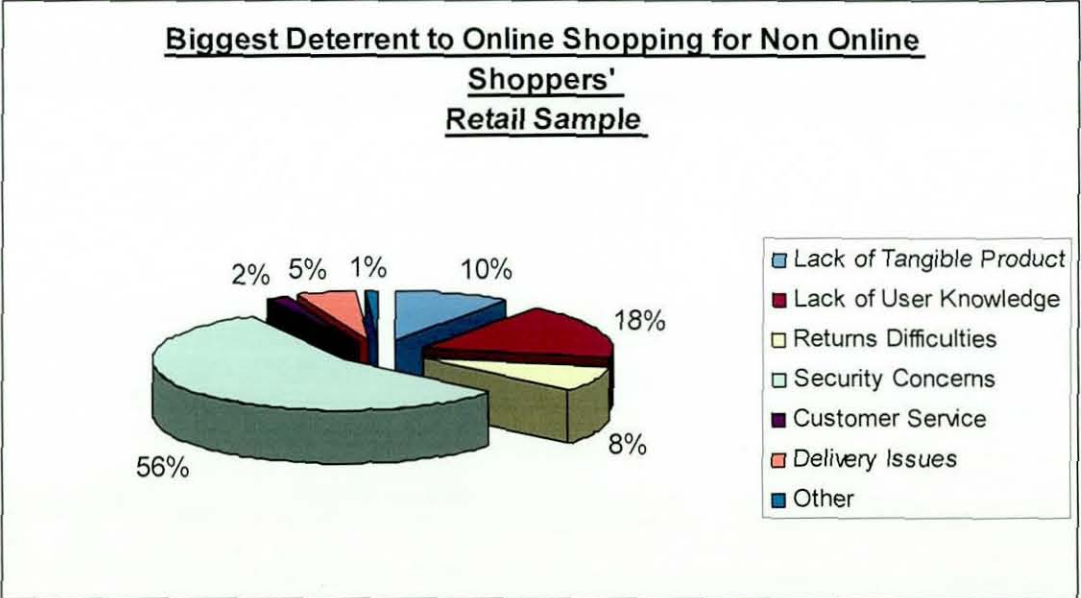
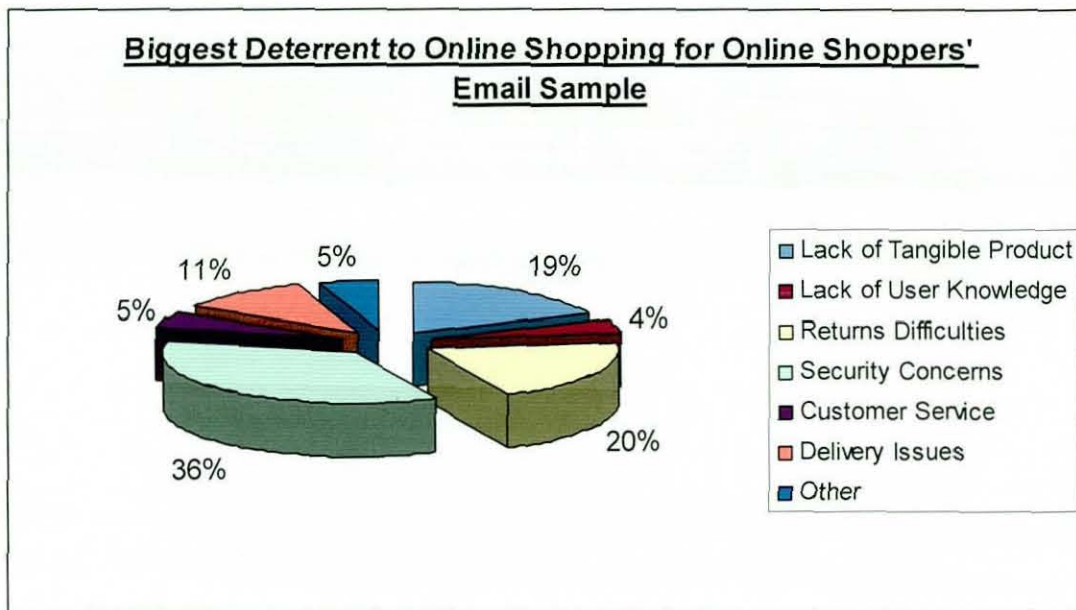


Fig.40 Biggest Deterrent to Online Shopping for Non-Online Shoppers' - Retail Sample



These results were supported by other findings. Of those that had not purchased online, 56% of respondents identified security concerns as the main deterrent.

Fig.41 Biggest Deterrent to Online Shopping for Online Shoppers' - Email Sample



Further reinforcement came from the email sample results. The majority of these respondents who had purchased online, 36%, selected security concerns as the biggest deterrent to purchasing online. Of the non online shoppers, 50% stated that security concerns were the main deterrent to them, see figure 41 above.

The fact that there was such consistency between the results is particularly telling. To further test these results, the responses of the level of agreement to three selected statements were analysed. The statements were selected as they focused on the respondents' attitude to security online and how confident they felt giving their card details over the Internet. The email sample results showed that main reservation for 88% of the respondents who are yet to purchase online when contemplating a purchasing decision was security concerns.

Fig.42 Biggest Deterrent to Online Shopping for Non-Online Shoppers' - Email Sample

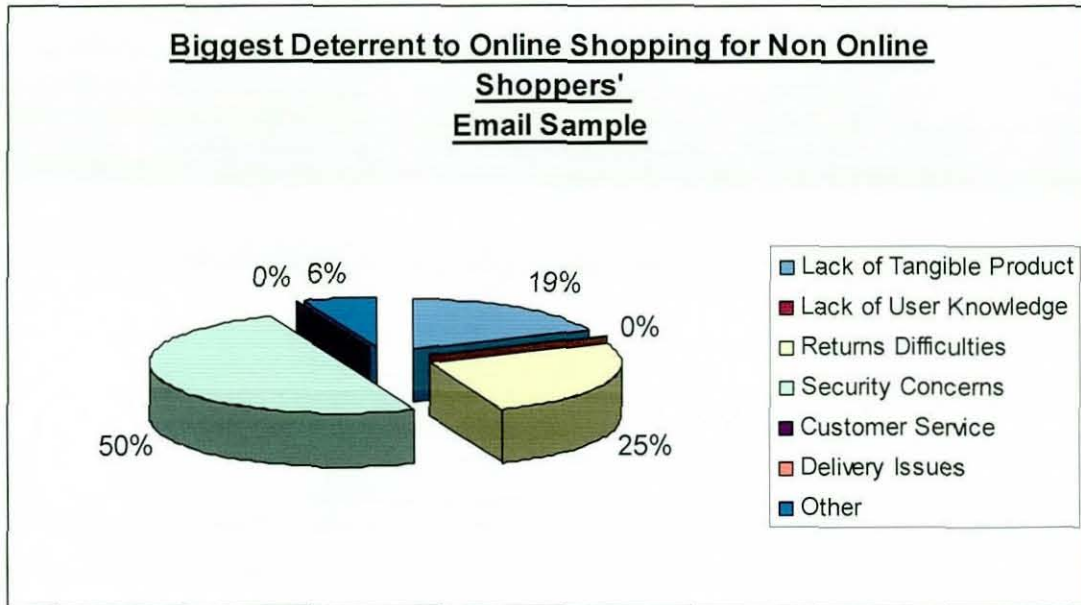
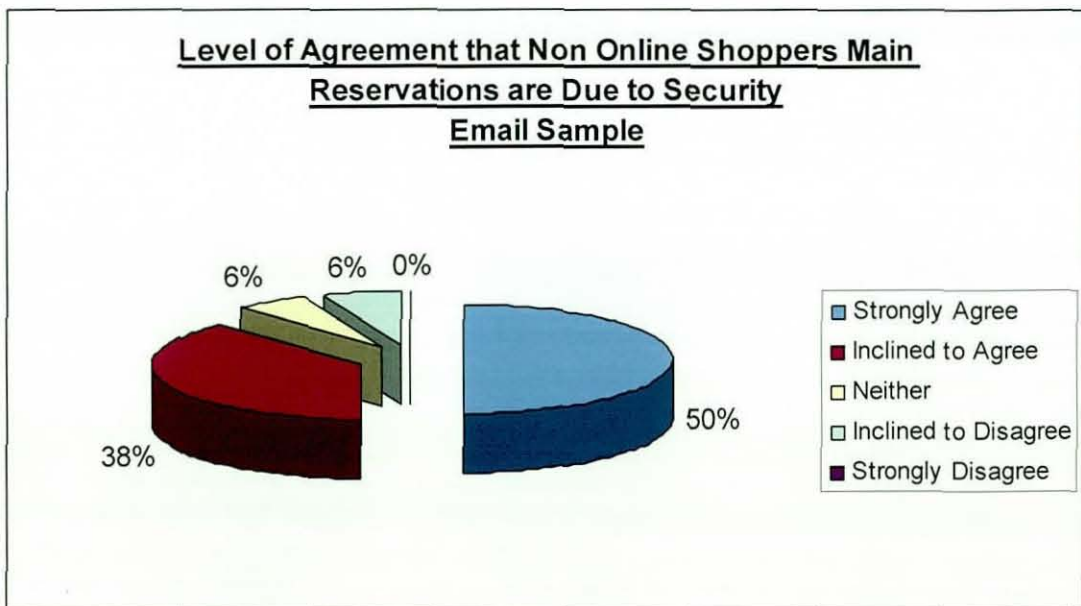


Fig.43 Level of Agreement that Non-Online Shoppers Main Reservations are Due to Security - Email Sample



These findings were supported by 94% of the non online shoppers identified in the email sample who agreed to feeling uncomfortable at the prospect of giving their



credit card details to an online store.

Fig.44 Level of Agreement that Non Online Shoppers Feel Uncomfortable Giving their Credit Card Details Online - Email Sample

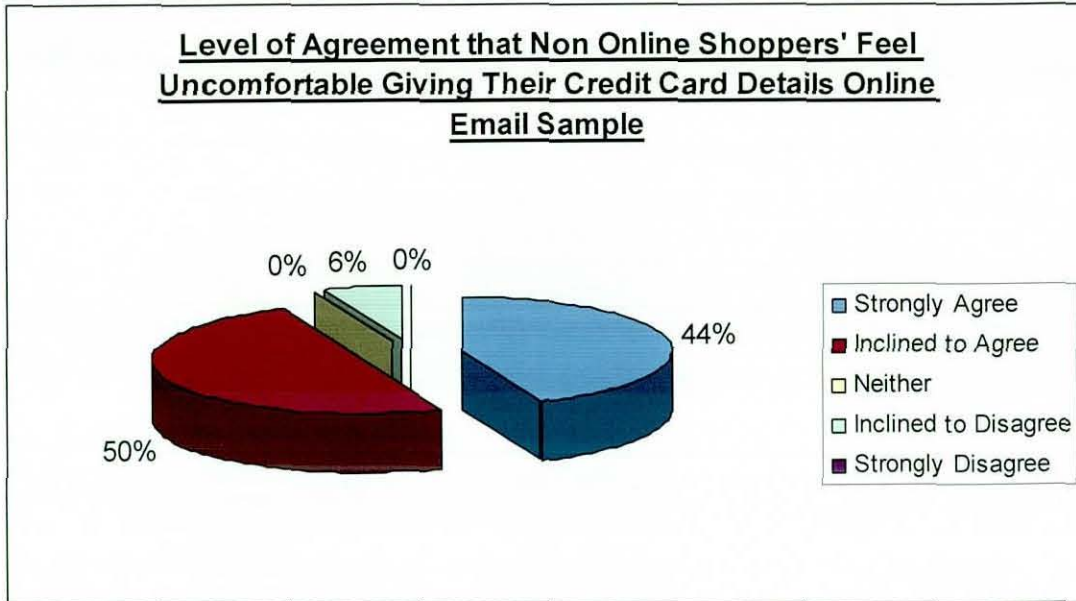


Fig.45 Level of Agreement that Non Online Shoppers' Main Reservations are Due to Security - Retail Sample



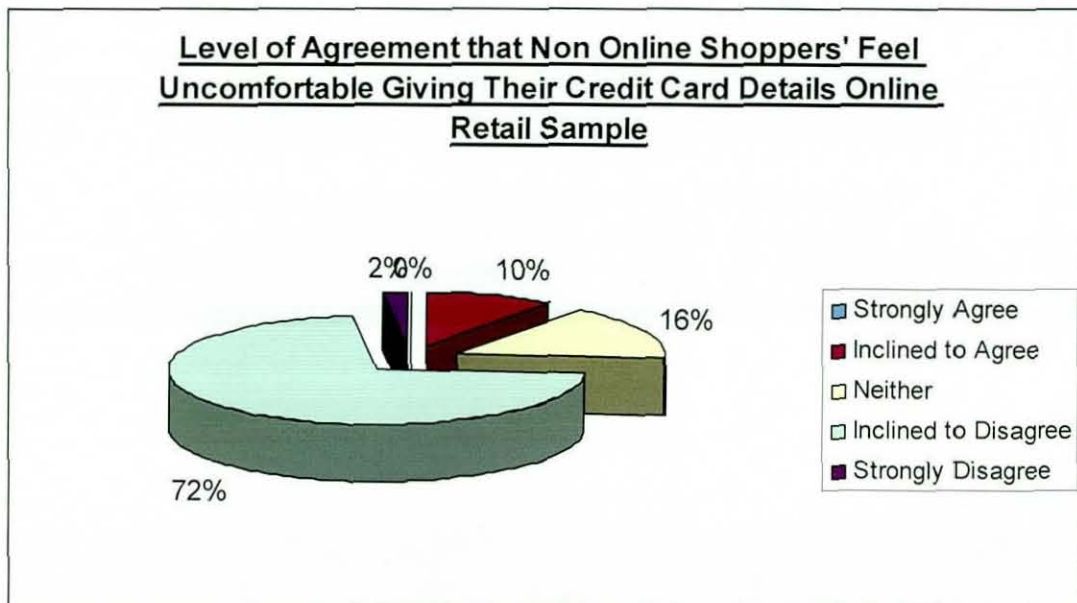
The retail sample results were similar; 83% of the respondents who were yet to

purchase online stated that their main reservation, when previously contemplating the purchasing decision, was security concerns.

These findings were corroborated by the result that 88% of the same group of non online shoppers stated that they would agree to feel uncomfortable at the prospect of giving their credit card details to an online store.

Fig.46 Level of Agreement that Non Online Shoppers Feel Uncomfortable Giving their Credit Card

Details Online - Retail Sample



Although the study showed that a high proportion of the email sample had purchased online, the issue of a barrier preventing the expansion of e-commerce appeared to be still important with 95% of the email respondents claiming that they intend to purchase online within the next twelve months compared to only 48% of the retail sample. Although the main factors influencing a consumer's purchasing decision are

their own attitudes and opinions, external influences such as word of mouth should not be overlooked. Interestingly, of those that had not yet purchased online, none would contemplate purchasing from a website, even if the website had been personally recommended by a friend.

### **5.6 Factor Analysis**

In order to gain a better understanding of the main factors that influence a consumer's purchasing decision; factor analysis was carried out on the questionnaire responses. The retail and email sample were combined to create one large sample, as this makes the analysis more reliable and also should highlight the differences between the two groups. The factor analysis was used to determine the minimum number of hypothetical factors that can account for the observed association between the variables. It was therefore Exploratory, rather than Confirmatory, which is more focused on testing and confirming an anticipated hypothesis (Kim & Mueller 1978, p.238).

The principal component extraction method was used with a varimax rotation. This is considered to be a sound method as it simplifies each column of the factor matrix, is conceptually easier but still provides clear results (Kim & Mueller 1978, p.238). The varimax rotation method also has the advantage of keeping the factors independent of each other in the analysis, which makes it easier to analyse the results. Oblique rotation was also considered. However, as it does not keep the factors independent, it creates an overlap in the results, making them more difficult to interpret. The results from the factor analysis are discussed below.

### 5.6.1 Total Variance

The total variance explained table, presented below, displays the total number of factors extracted, labelled components, and displays them in descending percentage of variance.

Table 15 Total Variance Table

#### Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
				Loadings			Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.075	36.248	36.248	5.075	36.248	36.248	3.151	22.509	22.509
2	1.710	12.211	48.459	1.710	12.211	48.459	2.859	20.420	42.928
3	1.286	9.185	57.644	1.286	9.185	57.644	1.661	11.864	54.792
4	1.035	7.396	65.040	1.035	7.396	65.040	1.435	10.248	65.040
5	.807	5.766	70.806						
6	.659	4.707	75.514						
7	.636	4.546	80.060						
8	.566	4.041	84.101						
9	.530	3.789	87.890						
10	.436	3.111	91.001						
11	.359	2.562	93.563						
12	.337	2.407	95.970						
13	.290	2.069	98.039						
14	.275	1.961	100.000						

Extraction Method: Principal Component Analysis.

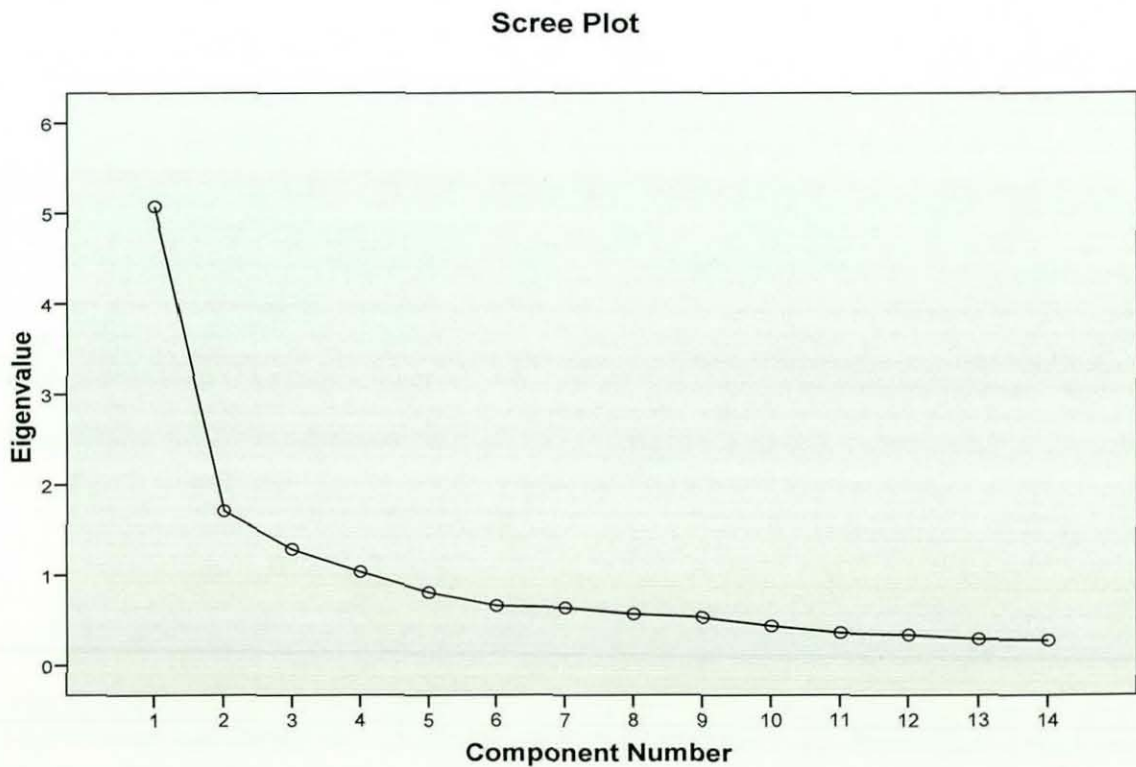
Column one of the table shows that of the 14 factors identified by the analysis software, four were determined to be the main factors. We can also see from column

two that these factors all had an Eigenvalue greater than one. This is the standard procedure as these factors account for more variance in the data than one variable. Columns three and four show the percentage of variance for each factor and then this as a cumulative figure. Therefore, the results show that the four factors extracted account for just over 65% of the total variance. This variance is presented more clearly in the Scree Plot graph.

### **5.6.2 Scree Plot Graph**

Unlike the Total Variance table, the Scree Plot graph creates a clear visualisation of the variance between the factors or components and this makes it easier to interpret.

Fig.47 Scree Plot Graph



The Scree Test, advocated by Cattell (Thompson 1951, p.112) was devised to help researchers ascertain the clear cut off point to stop factoring, and is still widely accepted today. The rule is to examine the Scree Plot graph of eigenvalues, and stop factoring at the point where the eigenvalues begin to level off. This point is referred to as “Scree” or “factorial litter” (Thompson 1951, p.112).

The Scree Plot graph , (figure 47), shows an initial steep drop between component one and two, representing a difference of almost three eigenvalues. This is expected within the first two components. Another sharp drop is shown between factors two and four and this is followed by a much softer descending slope between factors five and fourteen. At factor five, the plot starts to level out and this illustrates there is little difference between the values assigned to these factors. The graph also clearly shows it is at the point of factor five that the factors fall below the one eigenvalue level.

### **5.6.3 Rotated Component Matrix**

In order to fully understand the values assigned to the factors, the rotated component matrix is required.

The rotated component matrix is used to identify which measures are important in the different components.

The components represented by the vertical columns in the table are the clusters that have been created to show which questions have been grouped together.

Table 16 Rotated Component Matrix

	Component			
	1	2	3	4
Required knowledge?	<b>.785</b>	-.195	.099	-.084
Transactions open to misuse?	.116	<b>.772</b>	-.034	-.144
Assurance seals trustworthier?	.365	-.064	<b>.817</b>	-.022
Confident giving details online?	.411	<b>-.651</b>	.100	-.148
Need tangible product?	-.445	.287	-.102	<b>.589</b>
Websites gather info, purchase instore?	.096	.123	-.061	<b>.889</b>
Reservations mainly security?	-.182	<b>.747</b>	-.194	.131
Personally recommended website?	<b>.735</b>	-.052	.219	-.047
Assurance seals no effect?	.021	.155	<b>-.885</b>	.099
In store transactions safer?	-.187	<b>.581</b>	.032	.241
Shopping cart programs easier?	<b>.665</b>	.014	-.091	.100
Uncomfortable giving card details?	-.224	<b>.740</b>	-.124	.297
Intend to purchase?	<b>.754</b>	-.311	.138	-.244
Confident can identify secure transmission?	<b>.585</b>	-.366	.215	-.042

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

These are identified by looking at each component column individually and determining which of the questions labelled in the rows of the table, have been assigned the largest value; to clarify these have been highlighted in red. These components are discussed and evaluated below.

#### **5.6.4 Component Evaluation**

Having identified four components, the next stage of the analysis was to evaluate each component. This involved reviewing the highest scores allocated to each specified question, highlighted in red and presented in the rows of the rotated component matrix in the previous section, and identifying how the grouping of the questions can be related back to the themes of the research.

Component One consists of: Shopping cart programs easier to use (.665)

Personally recommended websites (.735)

Intend to purchase (.754)

Required knowledge (.785)

Confident can identify when transmission is secure  
(.585)

Although an apparently strange grouping, this component brings together two key aspects. The first two statements illustrate the consumers' need for familiarity. The shopping cart program was introduced not only to make the online shopping process easier and more intuitive, but also to provide customers with a format similar to that found in a traditional bricks and mortar store. This process of selecting items and then



proceeding to a check out to purchase the goods is familiar to customers and so helps to reassure them and ease them through the transaction process. This is similar to the theory behind the idea that some consumers who are unconfident purchasing online would be more likely to purchase from a website that had been recommended to them from a trusted source, such as a friend or family member.

As all the statements showed a positive score, it is unsurprising that the intent to purchase statement is clustered in this group, as it shows that the respondents that gave a positive response to that question would be likely to answer positively to the other statements.

The last two statements in the component illustrates that consumers have concerns they do not have the required knowledge to make a purchase online. Unsurprisingly, this is linked with the respondents' level of agreement to the statement that they feel confident that they can identify when the transmission of data, such as transaction details to a website, is secure. The positive values assigned to both statements are as expected; a respondent who agrees that they feel they do have the required knowledge to purchase online is likely to also agree that they would be able to identify when data transmission is secure. This also is true for the relationship when negative values are assigned, e.g., between the statements for respondents who did not agree. Although an area currently overlooked by e-commerce research, the consumers' knowledge of e-commerce and the processes involved will undoubtedly affect their future decision to purchase online.

Component Two consists of: *Transactions open to misuse (.772)*

*Confident giving details online (-.651)*

*Reservations mainly due to security (.747)*

*In store transactions safer (.581)*

*Uncomfortable giving card details online (.740)*

These are all related as they highlight the consumer's concerns about security, in particular the security of internet transactions and as a consequence the perceived danger of giving any card details online. This is further reinforced by the fact that their levels of agreement to two opposing statements, concerning how comfortable they feel giving card details online, have a similar value but with an opposing positive and negative charge.

Component Three consists of: *Assurance seals trustworthier (.817)*

*Assurance seals no effect (-.885)*

As expected, the level of agreement to the two opposing statements on assurance seals has positive and negative values. To simplify, those that agreed the presence of assurance seals made the website seem more trustworthy, disagreed to the statement that assurance seals actually have no effect on the perceived trustworthiness of a website. This again shows that the results are valid as the questions have measured what was intended. This result supported the need for further investigation of this area, see chapter eight.

Component Four consists of: Need tangible product (.589)

Websites to gather info but purchase in store (.889)

These two variables were grouped as the results showed a positive relationship between the respondent's level of agreement to the statements of wanting to be able to see and touch the product before purchasing and that although they are going online to gather product information, they still prefer to purchase in store. This highlights that not seeing the tangible product is another deterrent to purchasing online for consumers.

### **5.7 Website Design**

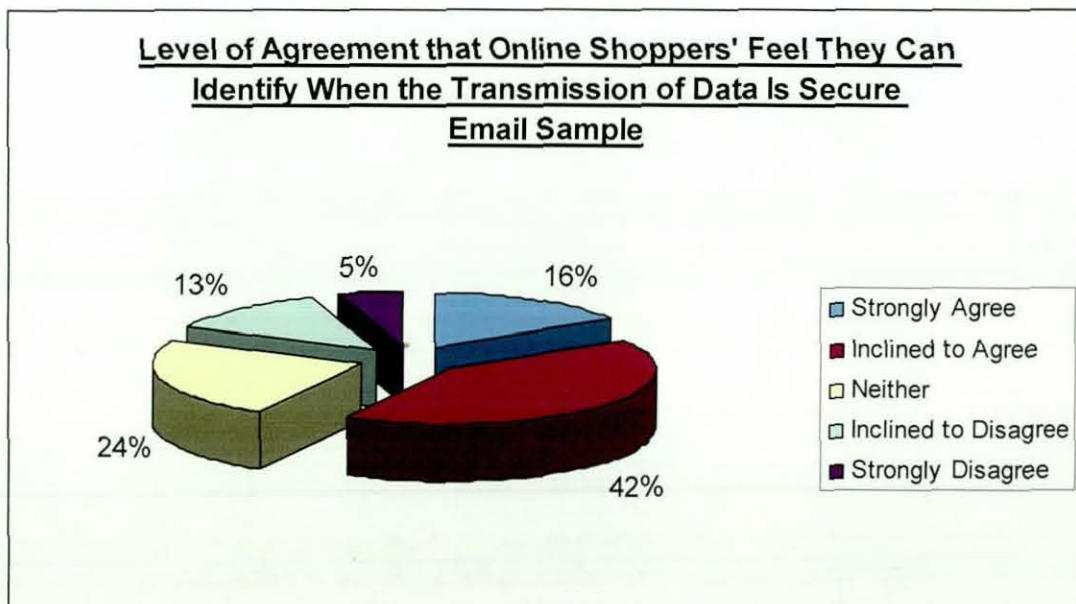
As with the factor analysis section of the report, the responses stating the level of agreement with specific statements were used to determine at what level the factor identified in the statement impacts on the perceived trustworthiness of the website.

A number of statements were devised to test previous research findings into the effect the design of a website has on its perceived level of trustworthiness. This topic has been the subject of many recent publications with studies aiming to identify what websites need to incorporate into their interface in order to reassure consumers that they are dealing with a reputable company and inspire confidence in purchasing from the site. One such study is the NFO study of 2003 that investigated the effect the presence of an assurance seal had on a consumer's purchasing decision. The study concluded that the presence of such a seal had a major affect on the consumer and over 49% of the respondents stated they would not purchase from a website unless a seal was clearly displayed (Kuchinskias 2003). Findings from an earlier study

conducted by Noteberg reinforced this view, showing that the presence of any seal on a website led to an increased intention to purchase (Kaplan 2003, p.41).

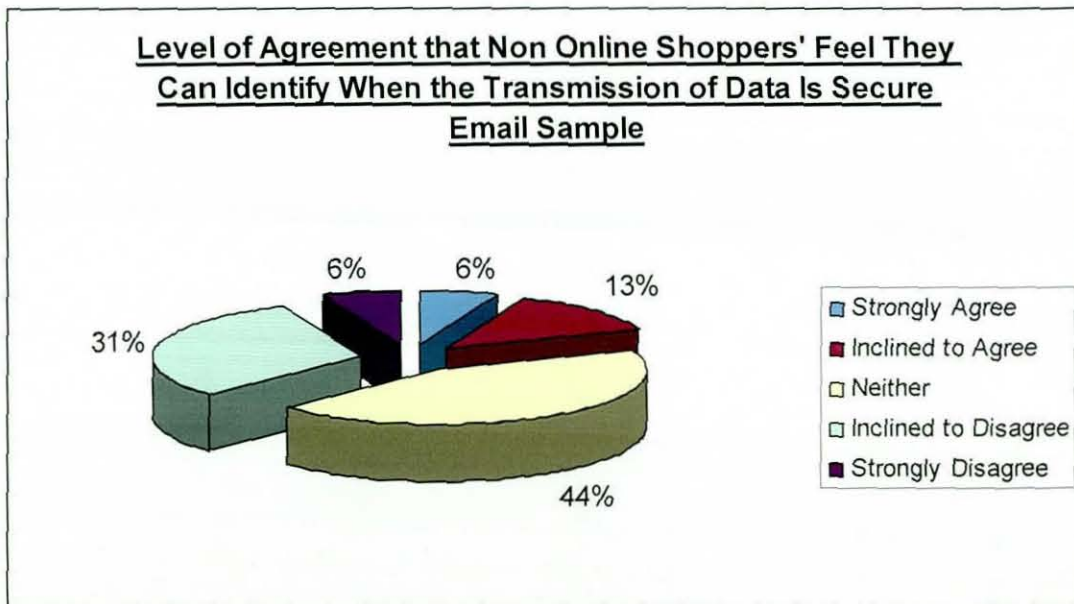
When asked to state the level of agreement to two contradicting statements concerning the effect of displaying an assurance seal on a website had on that websites perceived level of trustworthiness, the respondents felt that they had no opinion on the matter. Although these findings seem to contradict the previous research findings, the fact that they consumers had no opinion either way supports Kaplan's view that consumers need more education on what the seals actually mean before the increased trust benefits can be achieved (Kaplan 2003, p.42). These findings are supported further by the results from responses, showing the level of agreement to a statement that declares that they have the knowledge to identify when the transmission of data to a website was secure.

Fig.48 Level of agreement that Online Shoppers Feel they Can Identify When the Transmission of Data is Secure - Email Sample



The results from both samples showed that of those that had purchased online, the majority believed they had the required knowledge to recognise when a website is secure. In contrast, many of the non online shoppers felt they did not have the knowledge to identify a secure website. The email sample results show that 58% of the online shoppers felt they could identify when transmission of data to the website was secure. In contrast, only 19% of the non online shoppers agreed with the same statement.

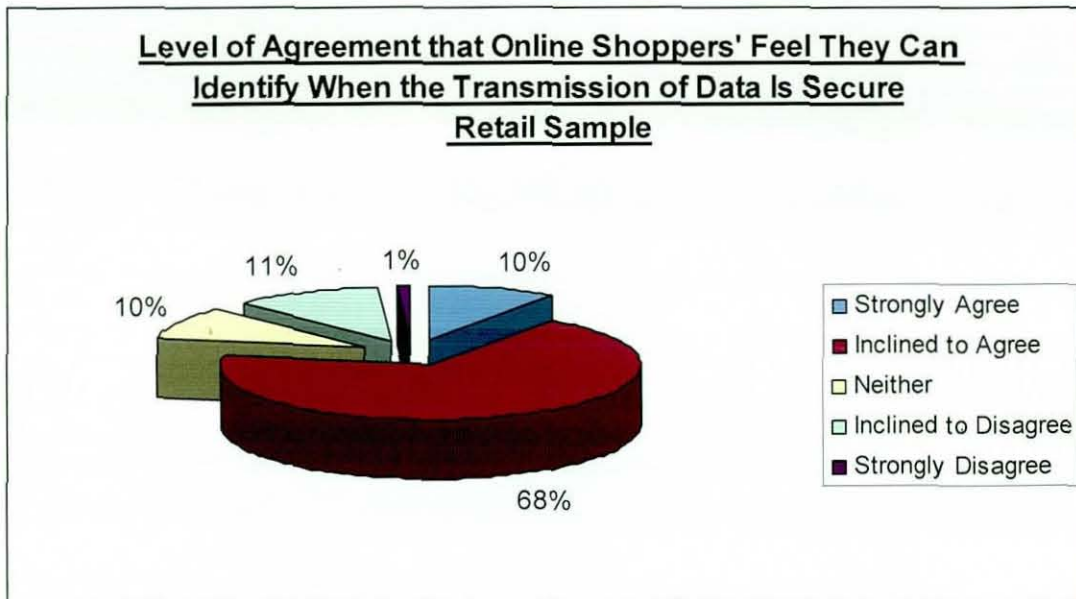
Fig.49 Level of Agreement that Non Online Shoppers Feel They Can Identify When the Transmission of Data is Secure - Email Sample



The retail results showed a greater divide in the respondents' belief that they have the required knowledge to determine when the transmission of details to a website is secure, dependant upon if they have previously purchased online.

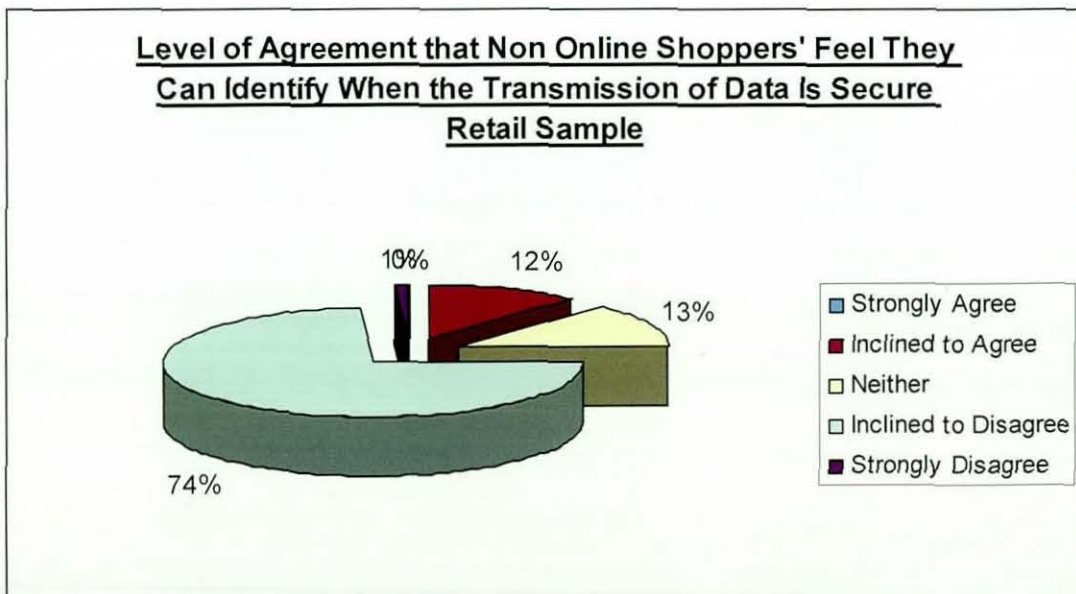
71% of the online shoppers agreed with the statement.

Fig.50 Level of Agreement that Online Shoppers Feel They Can Identify When the Transmission of Data is Secure - Retail Sample



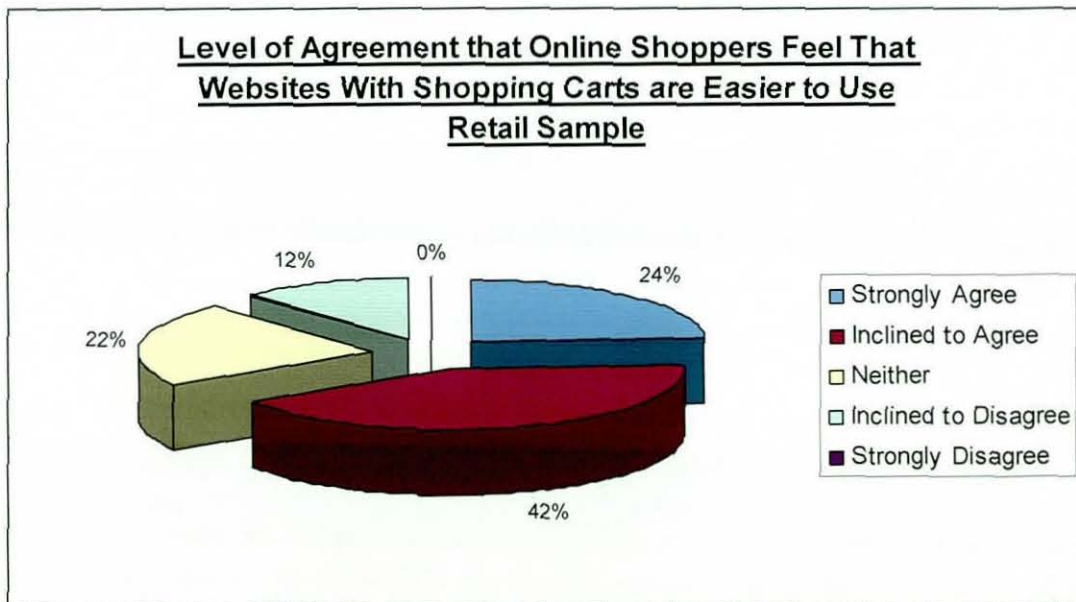
This is in contrast to the non online shoppers; 84% of whom disagreed with the statement.

Fig.51 Level of Agreement that Non Online Shoppers' Feel They Can Identify When the Transmission of Data is Secure - Retail Sample



In contrast, the results obtained from the responses to a statement concerning shopping cart programs suggested this was an aspect of the website’s design that respondents felt had an effect on the way they viewed the website and more specifically how easy the website was to use. Of the 67 retail sample online shoppers, 66% stated that they agreed that shopping cart programs made the website easier to use. Unsurprisingly, the non online shoppers had no opinion on the matter. A detailed breakdown of the results is displayed in figure 41 below.

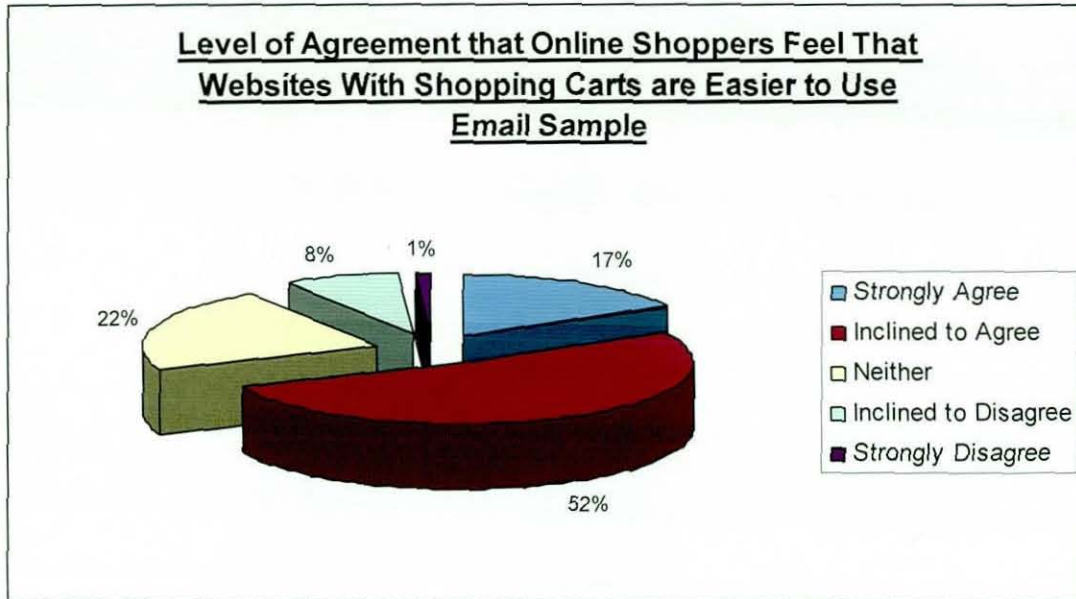
Fig.52 Level of agreement that Online Shoppers Feel That Websites With Shopping Carts are Easier to Use - Retail Sample



The email sample results confirmed these findings, with 69% of respondents agreeing with the statement. The majority of the non online shoppers had no opinion on the issue.

Fig.53 Level of agreement that online shoppers feel that websites with shopping carts are easier to use -

Email Sample



Previous research by Merrilees and Fry determined that the interactivity level of a web site was directly linked to the positive perception and level of trust of it (Merrilees & Fry 2003, p.216).

The analysis of the results shows that there are some elements of a website's design that can have a direct influence on the consumers' perceived trustworthiness of the site and subsequently the purchasing decision. This is an area that was investigated further with the qualitative research, and is discussed in chapter nine.



## **CHAPTER 6**

### **TRUST MODEL 1: INITIAL DESIGN & FIRST REVISION**

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To fulfil one of the key aims of the research, a model of trust was developed. The model encompasses all the research findings and allows a visual representation of all the factors affecting the consumers' trust and their decision to purchase online. Using preliminary results from the literature review, an initial model of trust was devised.

As shown in later chapters, this model was then revised as the research progressed, with the findings from the quantitative study being fed directly into the model design and appropriate revisions made. The final model was then tested using the qualitative findings.

This chapter discusses the design process and how the initial model was built and subsequently revised. The pilot study highlighted certain factors that could influence a consumer's Internet purchasing decision and their perceived trustworthiness of a website and these issues were considered when designing the initial model.

#### **6.1 Development of the Model**

The design of the model was decided upon after an evaluation of previous e-commerce models was completed, and is presented in the literature review chapter.

Although numerous models have been created by various authors, the designs were either too simplistic, therefore unable to convey detailed information, or too visually complicated to follow and therefore are unusable.

Egger's Model of Trust for Electronic Commerce (M.O.T.E.C) model is widely considered to be the most applicable for use in e-commerce research. It has also remained up to date, with numerous revisions to the model, using results from the testing of previous versions. This idea of revising the model to incorporate new research findings was considered the most suitable for this research study as it allowed a design process to be undertaken. It also influenced the research method, as the findings had to be able to be directly applied to the model and revisions made. This was particularly relevant with the issue of individuals' propensity to trust, as this was an area that was identified in the literature review that the majority of previous e-commerce research *had neglected, yet would understandably affect the individuals' decision to purchase.*

Although Egger's model considered the individuals' general propensity to trust, no criteria were established as possible influencers on them. This meant that a number of suggested influencing factors from recent research studies, such as the age and gender of the individual, were not taken into account. The model also failed to illustrate the effect these influencing factors had on the consumer.

As a result of the shortcomings in Egger's model design, it became apparent that there was a need for a more detailed framework that incorporated all the relevant recent research findings, and could also visually represent the relationships between these factors. This led to the creation of the initial model, presented as Figure 54 below.

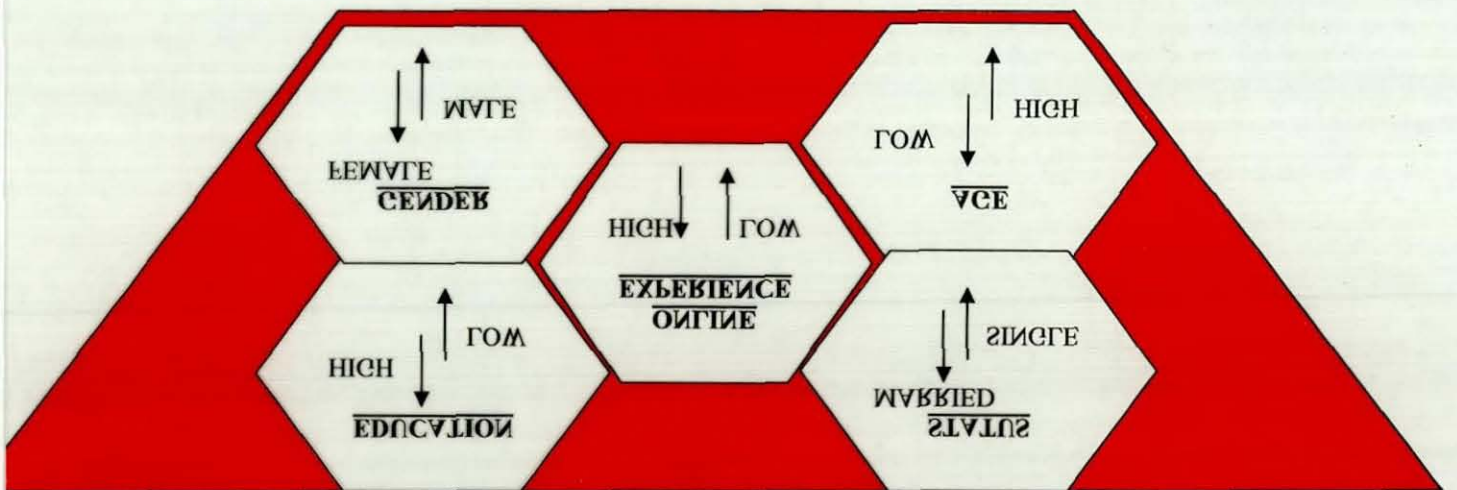
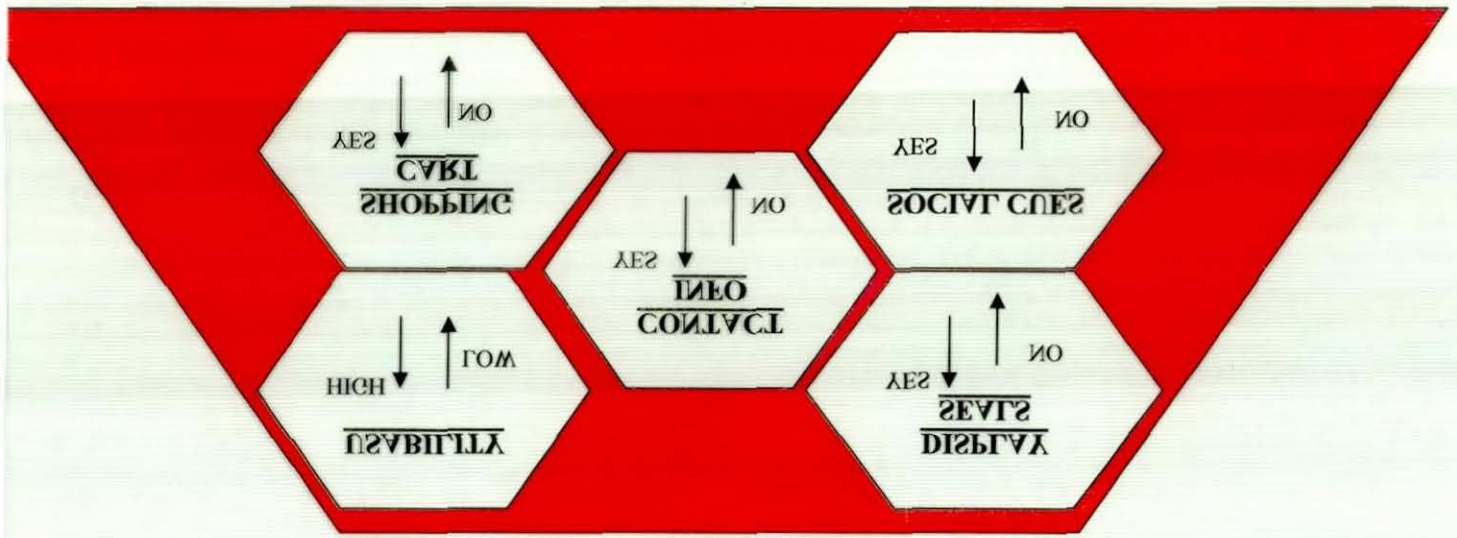
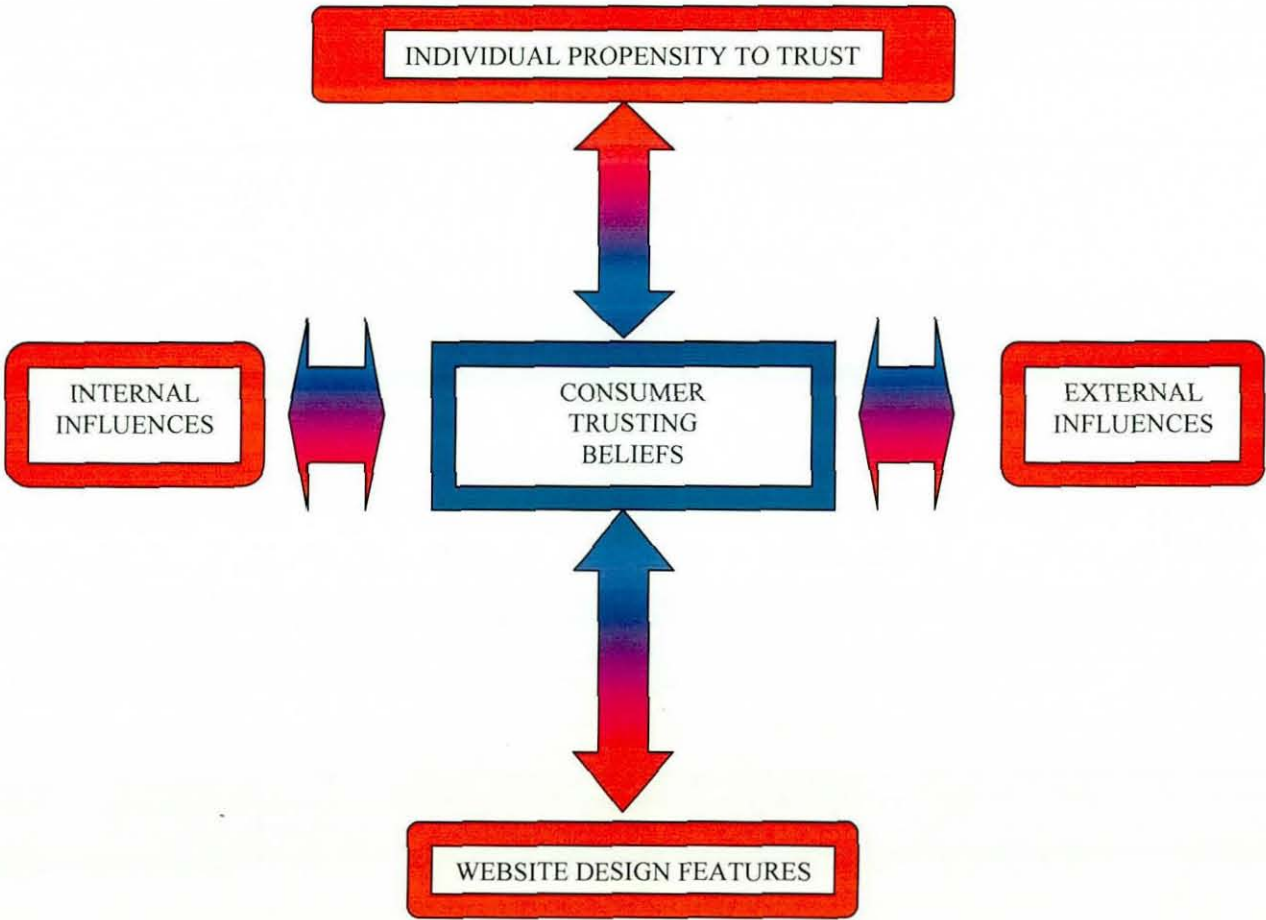


Fig 54. Initial Trust Model Design



The model comprised of two layers, illustrated by the transparent overlap. The primary layer is the base of the model and comprises of four core factors, which have all been suggested to influence consumer trust, which in turn will affect their decision to purchase.

These factors are: the individuals' propensity to trust, external influences, internal influences and the website design features. The secondary layer breaks down these four core factors into more detailed aspects, or sub factors. This gives the model a greater depth. It also identifies that both external factors, such as general retail trends, and internal organisation-specific factors, such as an organisations reputation and the type of product it sells, can have an influence on the consumers' trusting beliefs. The secondary layer also incorporates the secondary research findings, as highlighted in the literature review; it uses arrows to visually display previously suggested positive and negative relationships for each of the identified sub factors. This was an important aspect for inclusion in the model design as it was highlighted as missing from Eggers' M.O.T.E.C model. Although Egger's model did recognise the importance of considering the individuals' general propensity to trust, as no criteria were established and therefore no relationships examined, this strengthened the need for more detailed primary research to be conducted into how individual specific factors such as age, could affect their level of trust.

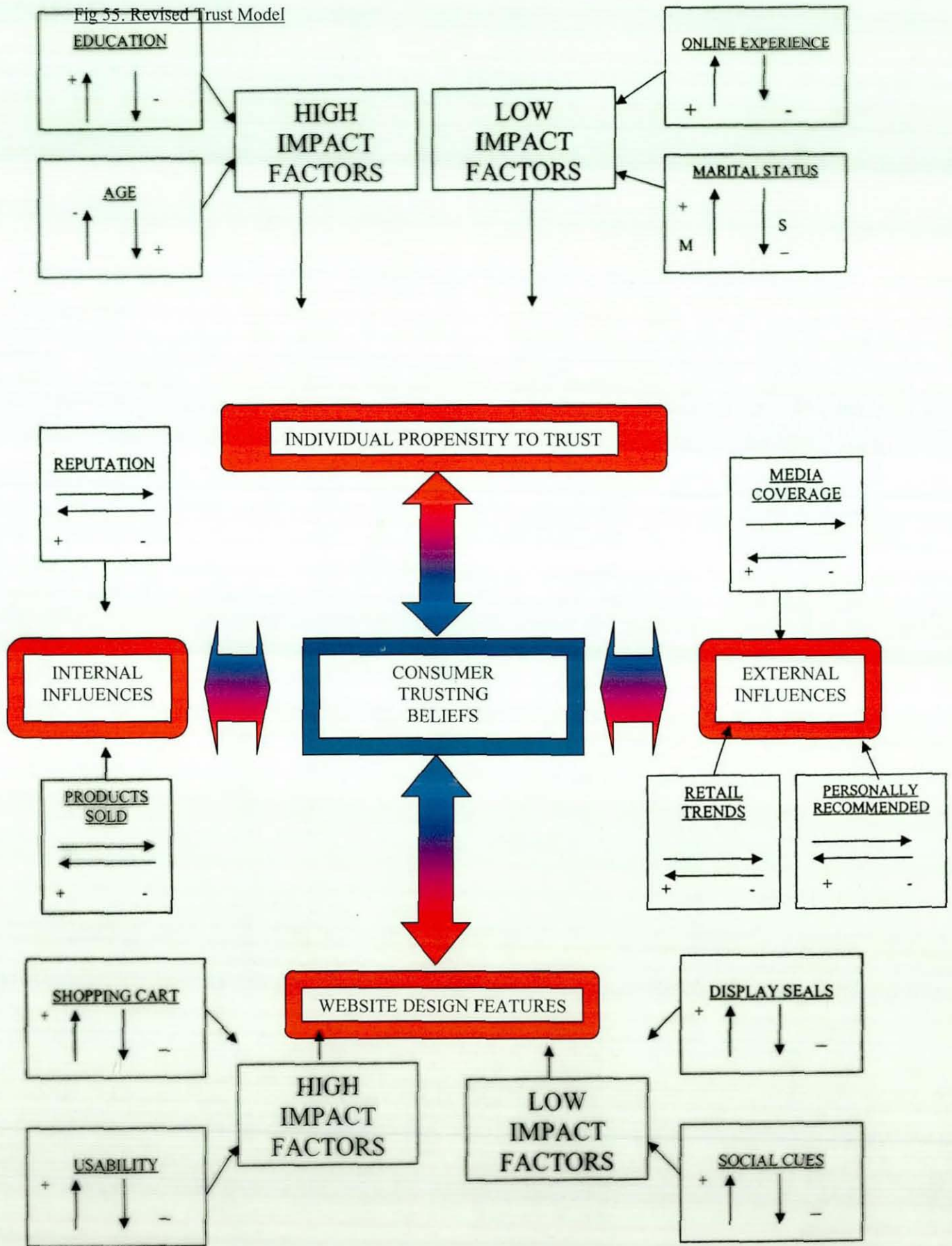
The model was then tested by the quantitative consumer research, outlined in chapter five, and refined.

## **6.2 Revision of the Model**

Results from the consumer research highlighted patterns that showed some factors were more influential on the consumer's purchasing decision than others. The model was revised to incorporate the new findings, see figure 55 below.

The new design builds on the primary layer from the original model design, which remains the core of the model. The secondary layer, unlike in the previous design, separates the factors into those established in the research findings as having a high or low impact on the trusting beliefs. A weighting system was also introduced to represent the varying impact different factors contained within the model have on the consumer. The four key components are broken down into detailed sections comprising of the individual factors and arrows are used to visually represent the relationship found in the research findings. The model shows which factors were identified as having a positive effect on the consumers' purchasing decision. Arrows were selected to represent this as they are simple but clearly show a varying level. As well as using the arrows, positive and negative symbols were incorporated to show what type of relationship had been established. An example of this is the age factor. The model shows the up arrow pointing to a negative symbol and therefore the down arrow is shown as a positive. This indicates that the results found a positive relationship to lower ages and a negative relationship with older consumers.

Fig 55. Revised Trust Model



The external and internal factors were shown by the research findings to have an impact on the consumer's purchasing decision. This was represented in the model by horizontal, not vertical arrows as the relationship depended upon the input from the factors themselves. An example of this is Retail Trends. If the trend is a positive increase in consumer sales as a whole, then there is subsequently expected to be a positive impact on the consumers' purchasing decision.

In addition to these changes, the gender factor was removed from the individual's propensity to trust section. This is due to the results showing inconclusive patterns in the relationship between the factor and the consumer's purchasing decision. The contact information factor was also removed from the website design features component of the model. This was due to the fact that it was viewed by the survey participants as being part of the social cues factor and therefore, did not justify a factor in its own right.

It was also necessary to rename two of the components of the core model base, as the previous titles could be perceived to be confusing. "External influences" was renamed "Social Influences" as this name more accurately reflects the individual factors within it and "Internal Influences" was renamed "Organisational Influences" as again it was felt that this name gave a more accurate representation for the model.

One factor was added to the new "Social Influences" section and this was to represent the effect a personally recommendation, such as from a friend or colleague, would have on a websites perceived level of trust. The security technology factor was removed from the "Organisational Influences" component of the model as it was



determined to be a factor that would not be visually present on the surface level of a website and so would not be easily apparent to a consumer.

### **6.3 Further Research**

The results from the questionnaire responses gave detailed information about the factors that appeared to have an influence on their trust. However, in order to fully test the model, insight was needed into whether the design of the website can affect the perceived trustworthiness of a website. Previous research conducted into this area determined that consumers respond more positively to websites which use visual cues, such as assurance seals and customer testimonials, to assure consumers that the website is trustworthy.

To determine if these do indeed affect the consumers' decision to purchase and therefore increase the perceived level of trustworthiness of an online store, further research was conducted. The qualitative research, as outlined in the qualitative methods chapter, allowed for greater insight into how consumers' perceptions of websites can be influenced by the website design.

The research focused on observing participants' behaviour when completing an online shopping task. The inclusion of a post task interview provided the insight into how the consumers viewed the websites, and this could be compared to the behaviour observed. These results were then used to test the revised model and, if necessary, further revisions made. The final model was then analysed.

The results from the qualitative research are presented in chapter nine, and the implications for the model discussed.

**CHAPTER 7****QUALITATIVE RESEARCH**

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As previously mentioned the research was qualitative in nature but drew on quantitative techniques. To obtain the necessary qualitative data, the findings from the quantitative research were tested in the third year of study using an Observational Study and Interviews. This research is outlined below:

**7.1 Research Design**

To gain an insight into how consumers perceive the trustworthiness of different websites, an observational study was conducted. This further examined the design qualities of a website that increase the perceived level of trust, thus positively influencing the consumer's purchasing decision. The focus group method was considered for its relevance to the research question and the ability to gain a multi stakeholder perspective on issues of concern with its debate format. The method was ultimately rejected because of the need for an experienced moderator and the difficulty in organising the group sessions due to clashing timetables and geographic distances. Although the method was not selected, the design principles behind it were used as a template for the qualitative research design, most notably for the selection of a seven participant sample size.

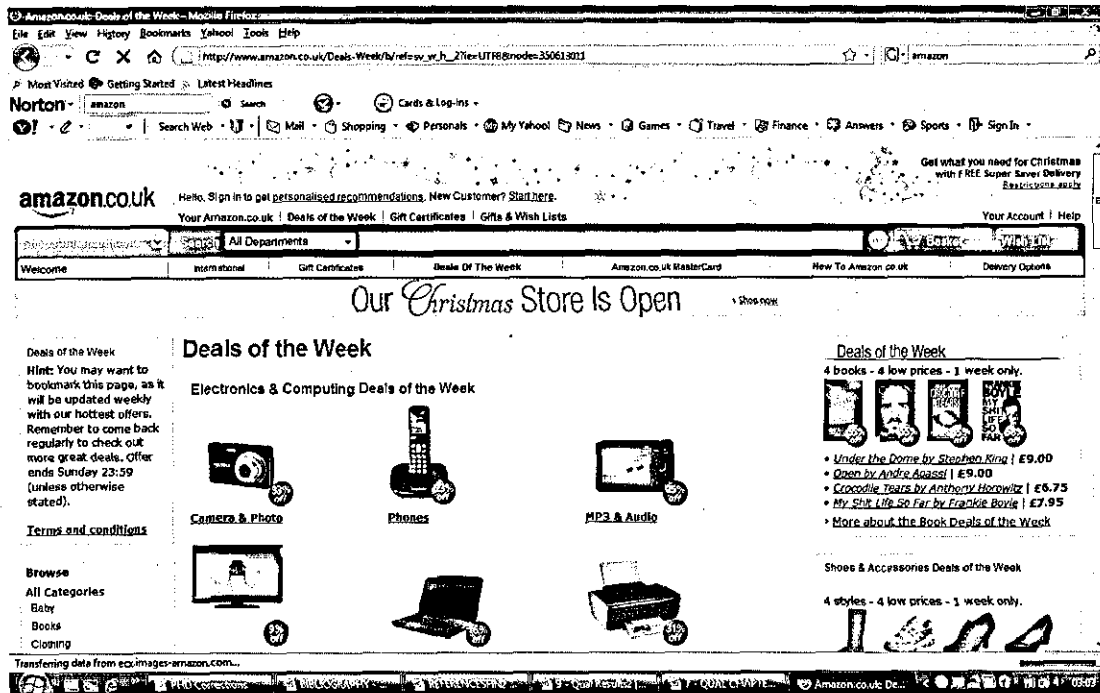
The participants were set a task based around a Christmas shopping scenario, to represent a familiar situation, and asked to locate four items on a shopping list (see Appendix 3). All the participants selected for the qualitative stage of the research were chosen due to their initial responses from the quantitative survey questionnaire. Participants were called in to a room independently and were firstly asked to complete

the original survey questionnaire again, to check for differences in opinion from their previously submitted questionnaires. They were then given their task instructions and left alone to complete the task, to undergo the purchasing process for all four items and stopping only when asked for their personal details such as credit card information. The participants were both observed and video recorded whilst undertaking the Online Shopping task, with the focus being on the participants' behaviour and interaction during the task. The video recordings were later analysed and any comments made by the participants or visual cues, such as body language and expressions, were noted. Immediately after the task the interview stage of the process took place, again the participants were voice recorded so the tapes could be later reviewed and interview transcripts collated. These transcripts are presented in the appendix section, (see Appendix 4).

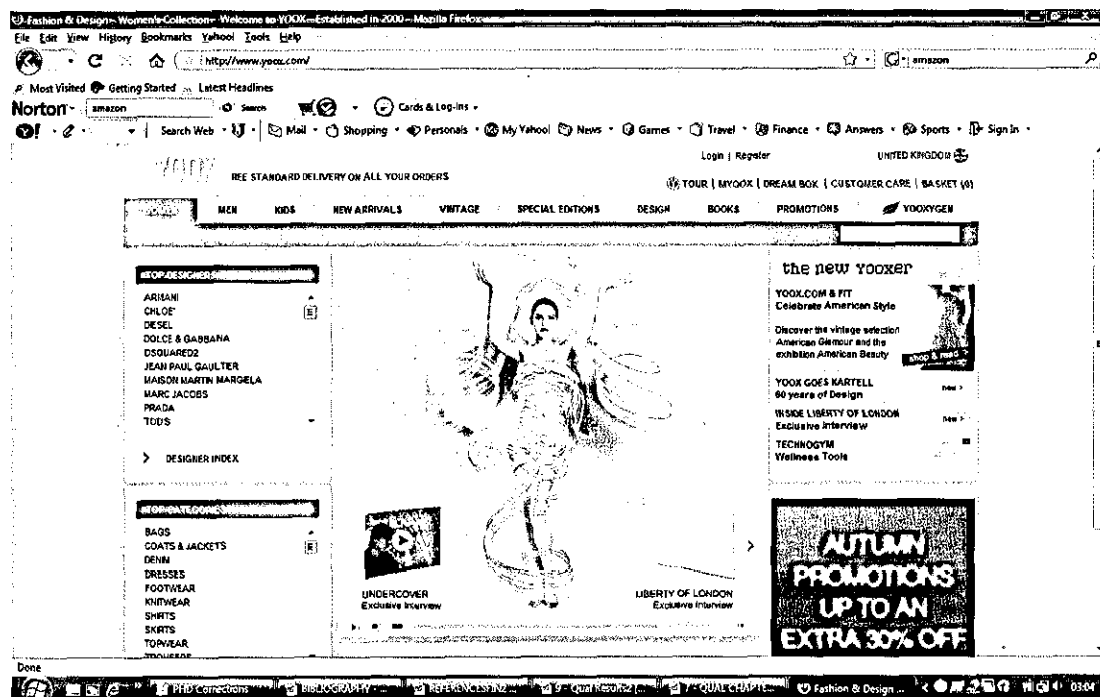
In a real world situation, the consumer would be spending their own money, however, this was deemed unpractical in this situation. Consequently the results therefore would be somewhat limited if the participants were asked to complete the transaction process, as the situation created is artificial and the perceived risk for participants will be greatly reduced. It was therefore more realistic to observe and record the behaviour of the participants during the task and then conduct an interview immediately after the session to determine how they rated the different websites on a number of factors including usability, design and trustworthiness.

## 7.2 Website Selection

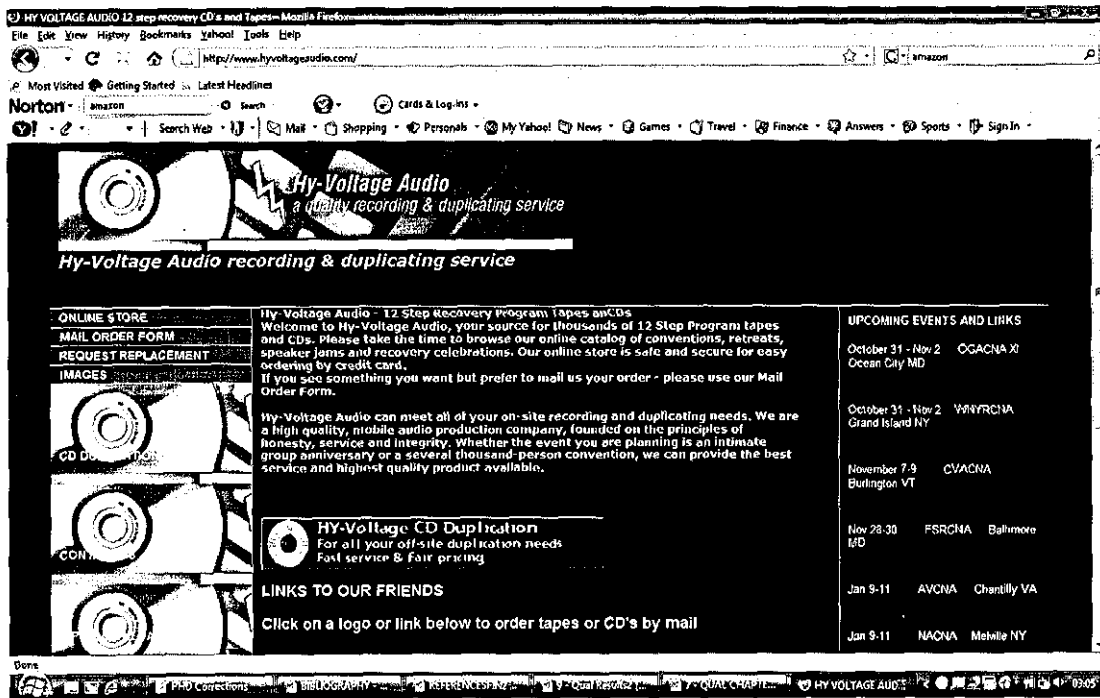
Four websites were chosen as examples of well designed and poorly designed websites, using the criteria outlined by the quantitative research participants and were then evaluated. The websites selected consisted of: Amazon ([www.amazon.co.uk](http://www.amazon.co.uk)),



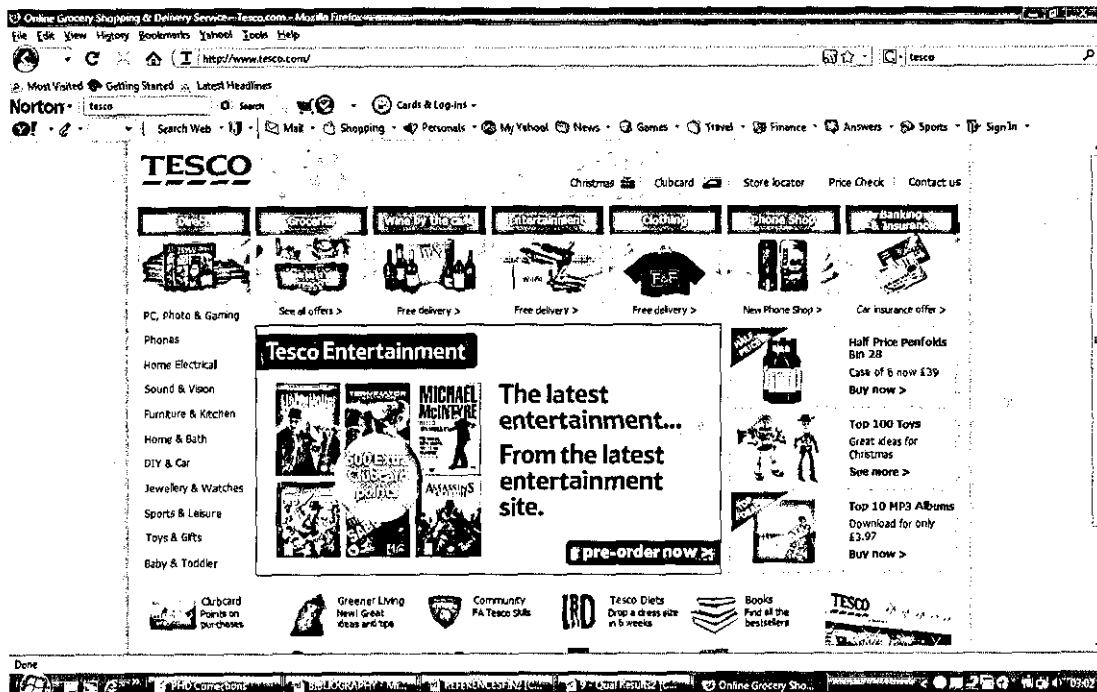
Yoox ([www.yoox.com](http://www.yoox.com)),



HyVoltageAudio ([www.HyVoltageAudio.com](http://www.HyVoltageAudio.com))



and Tesco ([www.tesco.co.uk](http://www.tesco.co.uk)).



Amazon and Tesco were chosen as they are well established retailers, and would be easily recognisable to the participants. Amazon was one of the first established e-tailors, specialising in the sale of low cost items such as books, DVDs and CDs.

Although recently expanding to incorporate C2C commerce with its online marketplace, it is today well recognised as an online only brand. Tesco is an example of an established traditional retailer with a comparatively newly established online presence, identified as having a “real” place to go to in case of problems when purchasing online. However, as with most high street retailers, the online sector of the organisation is run independently. This can create confusion when customers are presented with difficulties such as returning unsatisfactory items in store, and as a consequence Tesco.Com had been subject to intense criticism on various Internet blogs and consumer forums, such as Brandrepublic and Grumbletext in the months leading up to the observation sessions. This was another reason for its selection, to investigate if external influences such as negative press can have an impact on a websites perceived level of trustworthiness. This was a factor highlighted in the quantitative questionnaire and therefore was also a key element of the model.

HyVoltage Audio is a website that specialises in music and self help tapes and was selected as it is represented a poorly designed and relatively unknown site.

The final site, Yoox, was chosen as although it is well established in continental Europe, it was again relatively unknown in the United Kingdom and so would again have that element of the unfamiliar, whilst containing many of the criteria identified by the participants themselves of a well designed site.

### **7.3 Interview Design**

As with the quantitative survey questionnaire, a number of key issues had to be addressed when selecting the questions for the post task interview. The questions were carefully selected to ensure the information gathered from the responses was

relevant and met the aims and objectives of the research. It was also again important to ensure the questions were free from ambiguity and bias.

The interview consisted of 13 questions, with the objective of gaining an insight into how each website was viewed by the participant and which of the four they preferred. The interview length was kept to a minimum, taking a maximum of thirty minutes to complete, as the questions selected were specific to each area of the previous research findings and their relevance to the various elements of the model. The participants were asked to rate each website on the previously identified key aspects, and then questioned on their confidence in purchasing from them and why. As the data generated was qualitative, the open question type was used, encouraging the participants to offer a more detailed and richer response.

#### **7.4 Sampling**

As previously mentioned earlier in the chapter, all the participants selected for the second stage of the research were chosen due to their initial responses from the survey questionnaire. Seven participants were observed and interviewed in sessions conducted between February and April 2006.

##### **7.4.1 Sample Selection**

The sample selected has to represent a multi stakeholder perspective. It was therefore considered logical that the qualitative sample should comprise examples of all the key players, making the sample as representative as possible and offering an insight into how the perception of key issues varies between each participant. The sample was therefore separated into the same two subgroups as the quantitative survey, the email



and retail administered responses, to test for any differences or similarities between the two different samples.

The first group was made up of both staff members and students in the department of Information Science at Loughborough University. They were selected from the original emailed set of respondents as they were representative of that sample at large, offering contrasting views of regular online shoppers and those that had not purchased online. The second group of three participants was made up of shoppers previously selected at random for the quantitative survey in Loughborough High Street and were chosen for further study as they represented the shoppers who still preferred the traditional retail environment and had varying levels of previous Internet experience.

As the research findings would be used to test and further revise the model, the sample selected was further broken down into three main groups chosen to be representative of the key personal attribute elements of age, gender and level of education achieved. These items could be directly compared and participants selected who acted as spokespeople for the group overall. The groupings were chosen from the personal information section of the original questionnaire allowing the qualitative information generated to be directly applied to the revised model, developed using the results from the original quantitative survey, and further refined as necessary.

The participants will be identified and findings discussed in the Qualitative Results chapter to follow.

### **7.4.2 Limitations of the Sample**

The main limitation of the sample is its size. Although as previously stated “all researchers are very much dependant on the goodwill and availability of subjects” (Bell 2005). Due to time constraints and the fact that the initial survey sample was much greater, the smaller sample size was used with previously mentioned careful selection of the most representative participants. This meant that the participants responses were aligned with the majority opinions expressed. Subsequently, this method of selection is again non-random, as the sample was restricted by both the availability of participants and the fact that it only comprised of volunteers.

### **7.5 Data Analysis**

Qualitative data analysis is essentially concerned with non mathematical procedures that involve examining the meaning of individual’s words or actions (Bell 2005). This makes the data considerably more difficult to analyse than quantitative data and offers a limited choice of software packages. Atlasti software is considered to be the most popular for researchers. It allows codes to be attached to text that can then be searched and displayed for patterns. This enables unstructured data, such as interview transcripts, that cannot be analysed by statistical approaches, to be formally analysed.

However, due to the small sample size for qualitative analysis the responses from the interview questions were manually analysed and only descriptive statistics created.

The recordings from the observation studies were also manually reviewed and any notable behavioural patterns recorded. Although a key stroke program was considered to note the exact actions of the participants, it was rejected as unnecessary. This was because the qualitative study was focused on the participants’ reactions to the task situation and so the subsequent behaviour patterns and effect on the participant was

monitored rather than the human computer interaction. The results from the qualitative research are presented in the following results chapter.

**CHAPTER 8****QUALITATIVE RESULTS**

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As stated in the previous chapter the qualitative results were collected from both the task based observation study and the post task interviews. Upon collection of the data the results were analysed with initial focus on the individual participants, allowing a detailed insight into each person to be compiled. An overview of each participant is given. The findings are then presented in two sections, reflecting the two stages of the process, the observational study and the interview. The key points are presented for discussion, but the full interview transcripts are included in appendix 4. The seven participants are identified below.

**8.1 Participant One**

For the purpose of reporting the study findings the first participant was named P1. P1 is a male who was chosen from the traditional retail sample and is an online shopper. He is over 50, married and is self employed. Upon observing the participant completing the Online Shopping Scenario task, a number of key points were noted.

**8.1.1 Observation Study Results**

The first website on the shopping task was Amazon. P1 demonstrated an ease with the site and confidence when searching for the requested item. He used the search option to narrow the results and when this did not yield the correct item, he expanded his search terms and the correct item was then displayed. He then became confused on how to proceed and spent a few minutes looking round the website, clicking on his

shopping basket numerous times. After spending a number of minutes unable to find the checkout, he gave up. The total time spent on the website was eight minutes.

The second website was Yoox and unlike with Amazon, he spent some time looking over the site and familiarising himself with the layout, suggesting this was an unfamiliar website. Although he used the search function to again look for the item, he used the presented drop down boxes to narrow his search by designer and collection. Once he had located a similar item to the one specified on his task sheet, he went into the help function to try and find how to select a colour. He then selected the relevant option, which took him into the checkout screen, at which point he stopped. His total time on the website was four minutes and thirty eight seconds.

Upon entering the third website HyVoltageAudio again a number of minutes were spent looking round the website and clicking on links. P1 did not notice the link to proceed to the online store. He selected search but on the web browser, and this took him off the main website. He became frustrated; this was expressed by sighing and tutting at the screen and after looking round the site again, he stopped. He still spent eight minutes on the site.

The final site was Tesco and the bright colours immediately contrasted with the black of the previous site. The electrical items section was immediately selected and then scanned down the options listed. He then selected the home gadgets section, but this did not yield the correct item, so he used the search option which brought up the correct item. He then selected to purchase the item and clicked onto the checkout link, but then stopped at the security alert pop up. Although he went through to the final

stage of the transaction, he spent only three minutes on the site, the lowest amount of all four sites.

To understand how his experiences interacting with the four different websites during the task had helped him create his perceptions of them, the interview took place immediately.

### **8.1.2 Interview Findings**

The responses to the interview questions gave an insight into how P1 viewed each of the websites and also how he felt the task had gone. The full transcript from the interview can be seen in Appendix A4.1.

- Tesco was selected as his favourite website, as he felt it was the easiest to navigate and the simplest to buy from. Tesco was also the website he would feel most confident purchasing from, as it was the easiest to use.
- HyVoltage was named as his least favourite, as he felt this was the most difficult website to use and it offered no help in terms of directions. P1 also selected HyVoltage as the website he would feel least confident buying from saying "I would definitely go to another site to buy a CD".

This pattern suggests that there is a direct relationship between the users' perceived usability of a website and the level of trustworthiness they attach to it. This result was strengthened when the participant was asked to rate each of the websites on three main factors: usability, trustworthiness and overall appeal. P1 was invited to give each website a score of either: Very Good, Good, Average or Poor. He rated each website

the same for the Usability and Trustworthiness, this is displayed for ease of comparison in table 17 below:

Table 17 P1 Website Rating Scores

	<u>Amazon</u>	<u>Yoox</u>	<u>HyVoltage</u>	<u>Tesco</u>
Usability	Good	Good	Poor	V.Good
Trustworthiness	Good	Good	Poor	V.Good
Overall Appeal	Good	Good	Average	V.Good

- P1 did not look for either an assurance seal or privacy policy on any of the websites, and this was reflected in the observations.
- He did not feel that the Shopping Cart program made the shopping process online easier.
- Although he was aware what to look for to be sure that the website was secure, he did not look to check if the padlock was displayed on the screen at any time. When asked why he did not feel this was important, he replied "...it has never really bothered me giving my card details. I would have had to go further anyway".

These findings suggest that the inclusion of visual security items, such as assurance seals, did not have an affect on the participant.

- P1 had used Amazon to purchase items previously, but had not heard about nor used any of the others. When asked about Amazon's reputation he believed it was very good.

As Amazon was not selected his favourite website, this would suggest that consumers do not always necessarily prefer what they know. His belief that Amazon had a good reputation supports the theory that external factors can (unsurprisingly) have an effect on consumers' perceptions.

- Finally, he was asked to rate the overall shopping experience using the web, compared to the traditional high street experience "It is easier to sit there and you can pause it, etc. I usually know what I am looking for, so not like in shops when you can look round and pick things up as you see them. Buying online is more specific, so I wouldn't bother browsing."

## **8.2 Participant Two**

P2 is a female who was chosen from the traditional retail sample as a representative of someone who has not purchased online. She is over 50 years old, married and is self employed. Upon observing P2 completing the Online Shopping Scenario task a number of key points were noted.

### **8.2.1 Observation Study Results**

The first website on the shopping task was Amazon. P2 began her search by using the search option. She did not realise the default option was to search the book section and as a consequence got no results. She then expanded the terms and still did not get any relevant titles. This seemed to confuse her and she spent a few moments scanning the screen. After sitting silently looking over the screen, she then noticed the DVD option, which she selected. She sat moving the mouse over the screen and sighed a number of times. She then asked "what if I can't go any further". When asked by the



researcher if she had got to the enter details stage, she untruthfully said “yes” and then stopped. Her total time spent on the website was eight minutes.

The second website was Yoox. Upon entering the website, she immediately selected the male clothing option and used search terms to look for the item.

When this yielded the incorrect results, she scrolled through a number of pages until she found a similar item. After referring to her sheet, she realised it was incorrect and so used new search terms. When this did not work, she sighed and said loudly “I don’t like this, I thought I had ordered it but it is not in my basket”. She then went back to the previously selected product specification and although the item was incorrect, she still went to purchase the item saying “Yeah I Got there” and stopped after four minutes and thirty seconds on the site.

After opening the website third website HyVoltageAudio, she scrolled to the bottom of the page, she then closed and re-opened the website browser and after trying to open a number of links, she accidentally pressed the back button and said “I don’t know how I got here”. She then decided not to attempt the task and stopped after only three minutes.

The final site was Tesco and upon opening the website, she went straight into the shopping basket function and sighed when she saw it was empty. She then scrolled up and down the web page a number of times sighing and then said “I can’t find any of these”. After clicking on a number of links, she found the electrical items section and she then used the list of options to work through the items until she found the correct one, and did not use the search option at all. After looking thoroughly over the screen

she proceeded to the checkout and stopped, at which point she began smiling and shouted “Yeah”. The time taken to purchase the item was four minutes and forty three seconds.

### **8.2.2 Interview Findings**

As with P1, the responses to the interview questions gave an insight into how P2 viewed each of the websites and also how she felt the task had gone. The full transcript from the interview can be seen in appendix A4.2.

- P2 selected Tesco as her favourite website as it was the easiest to find items. She also selected Tesco as the website she would feel most comfortable purchasing from, but claimed this was due to her knowing Tesco as a reputable brand.
- HyVoltage was chosen as her least favourite as she found it confusing and didn't feel the website was very straight forward. HyVoltage was again also chosen as the website she would feel most uncomfortable purchasing from due to her finding it so hard to locate the item on in the shopping task.

These results again seem to strengthen the theory that there is a direct relationship between the interaction with the website and its perceived level of trustworthiness. However, P2 was more influenced by her previous knowledge of the Tesco brand when deciding which she felt was the more trustworthy site, rather than her personal experience from completing the Shopping Scenario task. To examine this relationship

further, her responses from the third question, where participants are asked to rate the websites on various factors, are examined.

Table 18 P2 Website Rating Scores

	<u>Amazon</u>	<u>Yoox</u>	<u>HyVoltage</u>	<u>Tesco</u>
Usability	Average	Average	Poor	Average
Trustworthiness	Average	Good	Poor	Good
Overall Appeal	Average	V Good	Poor	Good

The ratings given to each website reflect the previous statements in that both the Amazon and HyVoltage website was rated the same for each three factors. Tesco was only rated average for its usability, but was perceived to have a good level of trustworthiness and overall appeal. This again reflects her statement that she chose the website as the one she would feel more comfortable with because of her previous knowledge of the brand and its good reputation, rather than her interaction with it during the task. Yoox differed from the others in that although she only gave it an average rating for its usability, possibly due to her inability to find the correct item, yet she rated it good for trustworthiness and very good for its overall appeal. Yoox is a clothing website which is very bright and colourful, and P2 identified that she found the site to be very well presented . In order to determine if therefore it could be the website's design or even the products it sells behind the positive scores, more responses needed to be analysed.

- P2 stated that she did not look for any assurance seals, privacy policies or even to check if the website was secure. She did, however, admit that this was mainly because she felt she did not have the knowledge to do so, saying “I would not know what to look for”.
- She also claimed that the type of product sold would not affect her decision to purchase online, arguing “I do not think it matters”.
- P2 did however feel very positively about the Shopping Cart program. She believed it makes shopping online easier as “...it is all set out for you”.

These responses do suggest that some website design features, such as the Shopping Cart, do have a positive influence on a consumers' perception of a website. However, the visual cues that are related specifically to security were ignored, perhaps because she was unconfident in her own abilities to recognise such cues, and so is may be linked to her perceived lack of information. This was seemingly contradicted, however, in her statement that she found the items quite easy to locate, although she admitted that “I only found two”. This was in fact untrue, as she only located one item correctly and so either was unaware that one of the items selected to purchase, the Yoox wallet, was in fact the wrong item or she lied in her response. If she did indeed lie to the researcher in her response, this could be explained by her embarrassment in being unable to find the items. This is supported by the observations made during the task where she reported inaccurately her progress a number of times during the task to make herself seem more competent than she actually was.

- When asked to rate the overall shopping experience using the web, compared to the traditional high street experience, she seemed to still much prefer the traditional retail approach because "...I can see what I am buying and what is happening". Although she did say that she thought "...if you got into shopping on the internet you would find it much easier".

This response was found to be typical of many non online shoppers in the original survey in that they believe that shopping on the web may in fact be easier once they had got used to the process, but they still prefer to be in the traditional retail environment as they can both see and touch the item and see what is happening during the transaction process.

### **8.3 Participant Three**

P3 is a male who was chosen from the email sample as representative of an online shopper. He is over 50, married and is a lecturer at Loughborough University. The full transcript from the interview can be seen in the appendix A4.3.

#### **8.3.1 Observation Study Results**

Upon entering the Amazon website, P3 seemed very familiar with the layout and went straight to the search function to enter his terms. The next screen opened on the relevant item and he followed the transaction process through until he stopped at the log in page. He only spent two minutes in total on the site.

On the second website, Yoox, P3 seemed far less confident with the site design and spent a few moments familiarising himself with the drop down boxes and the overall

layout. He then began searching for the item and used the drop down boxes to narrow his search and to bring up a selection of items. After scrolling through the pages, he selected the correct item and then had to choose a size, even though the item was a wallet. This confused him and he went to select a size option but then changed his mind and tried to proceed with purchasing the item. At this point, he was redirected to select a size. Upon seeing the redirect screen he sighed loudly, chose the one size option and proceeded to the checkout. This was interesting as if he had trusted his initial correct instinct, he would have completed the transaction quicker. The total time spent on the site was seven minutes.

Similarly to Yoox, the third website HyVoltage seemed to slightly intimidate P3. He again spent a few minutes looking over the welcome page of the site and was annoyed when he selected the site map for guidance and it did not work. He then tried to find the listed item by using the website search facility and scrolled through the results pages. When unsuccessful, he then used an internet page search and again had no match. He then systematically searched through each link for the item working from the top down for the first five links and then changed direction and went from bottom up. He was now determined to find the item although appearing to get frustrated by the process; this was expressed by loud tutts at the screen and sighs. The item was found on the last link P3 searched, which ironically would have been next if he had continued with the top down approach. P3 then stated that he was frustrated that the site's main search had not located the item. His total time spent on HyVoltage was around twenty minutes.

The fourth and final website, Tesco, was a much speedier process for P3. After browsing over the front page, he selected the electrical section and used the search within this to locate item immediately. After quickly looking over the item, he then selected to purchase and went straight through to the personal details section at which point he stopped, after only one minute.

### **8.3.2 Interview Findings**

The main points raised from the interview with P3 are:

- P3 selected Amazon as his favourite website, he explained he had chosen Amazon because he liked the site and used it a lot. Unsurprisingly, he also selected Amazon as the website he would feel most confident buying from.
- HyVoltage was selected as his least favourite site and also the site he would feel least comfortable buying from. When asked to expand on this choice, he simply said “It was just terrible”.

This response showed that yet again the HyVoltage site had been voted both the worst website and the most untrustworthy. The responses to question three are presented again in tabular form for direct comparison.

Table 19 P3 Website Rating Scores

	<u>Amazon</u>	<u>Yoox</u>	<u>HyVoltage</u>	<u>Tesco</u>
Usability	V.Good	Average	Poor	Good
Trustworthiness	V.Good	Good	Poor	Good
Overall Appeal	V.Good	Good	Poor	Good

When giving his ratings for the trustworthiness of each site, P3 also discussed his reasons for each allocation.

- Amazon – His positive previous experiences with the site had been the main reason for its very good rating. The observation study findings supported this view, as it was noted how comfortable and confident P3 seemed when using the site.
- Yoox – P3 stated that he would not buy clothing from a web site and so this issue of products sold will be raised again later in the interview.
- HyVoltage – P3 did not feel comfortable trusting the site and stated that “...it just didn’t give me any confidence in it at all”.
- Tesco – like with P2, P3 felt that he trusted Tesco as a branded company and that he believed an organisation that size “...can’t afford to mess it up”.

These responses support the theory that an organisations high street presence has a positive influence on the perception of their online store. Tesco was selected for the study as it is perceived to be trustworthy, even though their online service was heavily criticised in the media. P3’s comments highlighted an issue with an element of the trust model, i.e., how much power do the media have as an external influence over consumers and are they are even aware of what stories are out there.

- When asked what reputation he thought the websites had, P3 said “I have not heard anyone slagging off the Tesco one, and I have seen the van racing around a lot so I assume it is doing reasonably well”.



This statement showed that P3 was unaware of the media criticism of the Tesco website. As an example of both a person who regularly uses the internet for work, as well as purchasing online and an Information Science academic, it raises the question if P3 was unaware of the media stories, would the regular consumer off the street be?

- P3 stated that he did not take any notice of assurance seals on websites. This was due to the fact that he believed it was too easy to just display one without offering anything to the consumers. He commented that "...even I could put one on my website".
- P3 also stated that he does not check any websites' privacy policies and even though he knew how to recognise when a website was secure, he felt that if the security padlock was not present, it would not affect his decision to purchase, stating that "...if it is there then it is good but if it is not there it wouldn't stop me from buying something".
- P3 felt, however, that the shopping Cart program did generally make shopping online easier as you can clearly see what you have selected to purchase.

P3's comments seemed to strengthen the theory that the visual security cues displayed on a website are ignored by consumers. Although a number of previous e-commerce studies, discussed in the Literature Review chapter, suggested that clearly displaying security and privacy policies was vital to get consumers to trust websites, this study's findings suggest that study's online consumers feel they are no longer an important factor when making their online purchasing decision, with the majority of respondents admitting they did not even bother to look for them, let alone read them.

- Unlike the first two participants, P3 felt strongly that the type of product sold on a website would affect his decision to purchase, claiming that he would not browse online instead focusing only on certain products that he is looking for.

This view was reflected in his decision to name Amazon as the most trustworthy website as he stated that is sold "...the sort of thing I buy the most of like books and CDs". He also stated that these items were best to purchase online anyway as they are items "...that you do not require seeing tangibly before you purchase them unlike a pair of shoes"

- Finally, when asked to rate the overall shopping experience using the web, compared to the traditional high street experience P3 said that he loved the web and much preferred it to shopping on the high street.

The main reason he gave for this was the fact that when online, he was not hassled by shop assistants. This directly contrasts with some e-commerce theories, that suggest that consumers prefer shopping on the high street because of the direct contact with sales advisors (Chen *et al.* 2002, p.716). P3 also believed that there is much better product choice online. He expanded on this by explaining some recent issues he had when trying to purchase a DVD player "...we looked around all over the place, you go into shops and they have half a dozen they want to get rid of but no choice, but on the web we found the exact one that we wanted".

#### **8.4 Participant Four**

P4 is a female who was chosen from the email sample as representative of a non online shopper. She is over 50, married and is employed as a lecturer at Loughborough University. The full transcript from the interview can be seen in the Appendix A4.4.

#### **8.4.1 Observation Study Results**

Although P4 stated she had never purchased online, she located the first item almost immediately. On the Amazon home page, P4 firstly selected the DVD page of the website and entered the search terms. This brought up the correct item and it was at this point that she seemed unsure how to proceed. After a few moments looking over the screen and the task sheet, P4 asked the researcher to clarify the process and this was briefly explained to her. She then seemed embarrassed and stated “well since I never purchase, I am not used to doing this”. She then located the checkout link and at this point she stopped, spending a total of six minutes on the site.

Yoox was the second website on the task and the immediate response seemed to be surprise at the design. P4 selected the men’s products and then searched for wallets. She also seemed again to be taking her time and read through all the information on the page. After selecting a wallet, she selected the drop down box but didn’t change the information and clicked enter, which gave her the prompt to go back and change the drop down information. This took her through to the final screen and she moved on to the next website after approximately four minutes.

Upon entering HyVoltageAudio, P4 firstly selected the online catalogue list and then was presented with another set of links. After a few seconds of looking over the page

,she announced "I must admit I am completely stuck on this, because I don't even know what your talking about here" She was not even going to attempt to find the item due to her own self doubt and perceived lack of knowledge. Less than one minute was spent on the site.

Tesco was the final website and after examining the front page of the site, electrical items were selected from the extras column. P4 then examined the links and selected small kitchen appliances, instead of using the now available search facility. She consistently used the links provided to narrow down her selection and within a few clicks had located the item without using the search. She then went through to the final screen, closing the website after three minutes and finishing the task.

#### **8.4.2 Interview Findings**

Throughout the tasks, P4 constantly kept referring back to her instructions and seemed unsure of what she was doing and the general layout of an online store. Not an online shopper, P4 was unconfident when navigating a website. When asked about the reasons for this before the interview began, P4 announced that she felt that it was mainly because "... these websites don't give things the way I think, the way that they are organised is not the way I think. Basically I am a trained indexer and I think most of their taxonomies are rubbish". When asked if she felt they are intuitive to use, she replied "No absolutely not, in fact the exact opposite". P4 stated that she would not feel comfortable purchasing from any of the websites and that in terms of their trustworthiness, she thought they were "all the same". This seems to support the previously suggested theory that if a consumer finds a website easy to use, then the

perceived level of trust will increase. P4 had stated that the websites did not present the information how she would have liked it, and therefore were unintuitive to her.

- Participant 4 selected Amazon and Tesco as her joint favourite websites as she felt they were the easiest to use.
- HyVoltageAudio was selected as the least favourite site although this was described as being unfair as "...I didn't even use the HyVoltageAudio one as I didn't even know what I was looking for".
- P4 stated that she did not notice if the websites had either an assurance seal or their privacy policy on display as she was not looking for them.

This finding strengthens the theory that visual cues on a website, specifically those that relate to security, are often ignored.

- This was reinforced with P4 stating that although she was aware what to look for, the small yellow padlock symbol, again she did not notice if any of the websites were secure as she was not consciously looking for it.
- P4 also stated that the presence of another visual aspect of a website, the shopping cart program, made absolutely no difference to her.
- Interestingly, when asked if the product sold by a website would affect her decision to purchase online, P4 claimed that she would be more likely to buy a book or DVD online than an electrical item as "...I would want to go down to the store and look at it, feel how much it weighs etc. I know I wouldn't buy things like that online".

This statement seems to reflect the previous findings that small cost items, such as books or DVDs are more likely to be purchased online than other items, which may be perceived as too risky to be purchased without seeing the tangible product first. This was reinforced with P4 declaring that "...if you are someone like me, you like to see and touch things before buying them". However, she would consider purchasing a DVD or book online.

- When asked to rate the shopping experience using the web, compared to the traditional high street experience, P4 felt that she just generally preferred the high street. Although she had never purchased online, P4 admitted that she uses the web to find out what's available and then goes into a traditional bricks and mortar store to buy it. She claimed it was "... like I do my window shopping online, and then go into the store so I know how much it costs, etc".

This routine of using the websites to browse for items online and then purchasing from traditional stores seemed to suggest that P4 was indeed a person who felt they required the physical item to be present when making a purchase. When asked about other methods of shopping, P4 said that she very much enjoyed looking through catalogues, but would never purchase from them. When asked to expand on this, the statement "I tend to use stores like Marks and Spencer as they don't give you any hassles if you need to return things" highlighted that this was mainly due to perceived difficulties if items needed to be returned.

### **8.5 Participant Five**

The fifth participant was named P5. P5 is a male who was chosen from the email sample as representative of an online shopper. He is in the 20 or under age group, single and is a full time Information Science student at Loughborough University. Again, the full transcript from the interview can be seen in appendix A4.5.

### **8.5.1 Observation Study Results**

P5 seemed very confident when entering the Amazon website and after initially selecting the DVD section of the site, he used the search facility. This brought up a list of items which after briefly scrolling through, he selected the correct item. He then selected to purchase the item, advanced to the checkout without hesitating to read over anything else and went through to the log in screen, where he stopped. P5 seemed very decisive and did not refer to his sheet, taking only fifty seconds to complete the first task.

On entering the Yoox website, P5 looked over the drop down boxes and seemed to be familiarising himself straight away with the layout of the site. He then selected the male collection and then used the drop down box to search for wallets. When this brought up numerous pages of items, he did not scroll through but instead went back and revised his search process. He re studied the drop down options and noticed the season selector. At this point he laughed and said "it is trying to catch me out". This showed his confidence and almost arrogant response to the fact that he had noticed the seasonal option. He subsequently selected the other season, re-entered his search terms and found the correct item immediately. Although the process was longer than with Amazon, P5 still only took four minutes to locate the correct item.

P5 had similar success with the HyVoltageAudio website. After initially scrolling down the website homepage, P5 selected the recording service option. He then looked over the listed options and selected to scroll through the list of titles. The next screen presented him with the search option and after entering his terms, it brought up the correct item which was selected in the relevant format. He then proceeded to the checkout and stopped after a total of only three minutes on the site.

After glancing over the Tesco website home page, P5 selected the electrical items section from the list. He then used the search facility and this immediately brought up the correct item. He selected to purchase the item and proceeded immediately to the checkout screen and was then prompted to sign in, at which point he stopped after thirty three seconds.

### **8.5.2 Interview Findings**

P5 clearly felt at ease interacting with all the websites and correctly located all four items. To gain an insight into how he felt the process had gone and his views on the websites, the interview responses were examined.

- P5 selected Amazon as his favourite website and confirmed that he had used the site a number of times before, even claiming that he would "...use it every time anyway even if the CDs are more expensive". Amazon was also selected as the website he would feel most comfortable purchasing from.
- HyVoltageAudio was selected as the least favourite website due to its perceived poor presentation. When asked to expand on this, P5 stated that "...the search bar was completely hidden out the way, you just could not find



it, and it just looked shockingly bad. It just wasn't good and not user friendly at all". HyVoltageAudio was also chosen as the website P5 would feel most uncomfortable purchasing from, again due to its unprofessional presentation.

These findings again showed that the website that was considered easiest to use was perceived to be the most trustworthy. In order to examine this relationship further, the responses to question three are presented again in table 20 .

Table 20 P5 Website Rating Scores

	<u>Amazon</u>	<u>Yoox</u>	<u>HyVoltage</u>	<u>Tesco</u>
Usability	V.Good	Good	Poor	Good
Trustworthiness	V.Good	Good	Poor	V. Good
Overall Appeal	V.Good	Good	Poor	Good

The findings supported previous participants' responses with the websites receiving the same rating for their level of usability as their level of trustworthiness. It is worth noting, however, that although Tesco was only rated good for its usability, it received a rating of very good for its trustworthiness. One possible reason for this may be its reputation as an established bricks and mortar store, as suggested by a previous participant, and this was further investigated by asking P5 if he had heard of any of the websites before using them today, and if so, what type of reputation do they have? He agreed that he only knew of Amazon and Tesco, and that he perceived them to have a very good worldwide reputation.

- P5 was also asked about the security specific visual cues on a website.

Similarly to previous participants, he admitted that he did not notice if any of

the websites displayed either an assurance seal or their privacy policies. He also admitted that although he knew what to look for, he did not check to see if any of the websites were secure, emphasising that he never bothered to look as he "...just does it".

- P5 did however feel that a shopping cart program does make it easier to purchase online, adding that "...at the end of the shopping trip you can see what you have bought and you can remove or add items as you like".
- When asked to consider the product sold on a website, P5 stated that it would not necessarily be an issue when making his purchasing decision because "...if it was on Amazon I would buy it because I trust it".

However, this statement was then contradicted with the response P5 gave when asked to rate the shopping experience using the web, compared to the traditional high street experience, "It depends what I am after, if it is just a few DVDs or CDs, things like that, then I will get it off the internet, but not being able to look or feel would stop me getting other things". This was an unexpected response for an online shopper who showed such a high level of confidence shopping online, which again highlights the multi faceted aspect of an individual's personality, and the subsequent effect this will have on their decision to purchase online.

### **8.6 Participant Six**

P6, was chosen from the email sample as being representative of a female online shopper. She had identified herself in the initial survey as being still unconfident when purchasing online. She is also in the 20 or under age group, single and a full

time Information Science student at Loughborough University. As with the previous participants, the full transcript from the interview can be seen in appendix A4.6.

### **8.6.1 Observation Study Results**

P6 seemed unfamiliar with the Amazon website and began her search by looking over the website home page in detail and searching for the item in all categories before selecting the required DVD option from the list. She then scrolled down two pages of results, whilst constantly referring to her task sheet before selecting the correct item. She then brought up the item spec, referred to her sheet again and then asked the researcher “shall I go to the checkout now?”

This need for reassurance suggested that P6 was indeed very unconfident when contemplating making her purchase. This was supported by the fact that even after adding the item to her basket, she went back to the original item specification page again to check against her sheet one more time that the item was correct. She then put the mouse on the proceed to checkout key, but hesitated to read over the page again before selecting to proceed to the checkout. The next screen prompted her to log in and she stopped after a total of two minutes and twenty five seconds on the site.

P6 showed similar caution on the Yoox website, fully reviewing the search and drop down boxes. She was unsuccessful in locating the wallet. After searching through numerous pages of items, she returned to the search facility, and after consulting her task sheet again, she altered her search terms. This then brought up four pages of

wallets which she scrolled through, even though they were not specifically male as stated on the list. Once P6 had reached the end of the items, she then referred to her sheet again and at this point noted the separate sections for male and female items on the website. She then re-entered her search terms and looked through the male wallets. When this did not retrieve the correct wallet, she began to express her frustration by sighing loudly at the site and asking the researcher "am I just being thick?". She then went back to the drop down boxes and said "It is just not useful". After careful re-examination of the home page, she then noticed the season selector and selected autumn/winter, laughing at this point she shouted "There we go, that's not at all user friendly". P6 then found the correct item and loudly exclaimed "Right, now how the hell do I buy it?". After selecting the colour, she successfully went through to the shopping basket, where she then stopped after five minutes and nineteen seconds on the website. It was interesting to note P6's obvious high level of frustration at the website after only a relatively short amount of time looking for the item and also how she seemed to question her own abilities when unable to find the correct item.

Upon entering the HyVoltageAudio website, P6 showed her initial reaction to the site by sighing "oh God". However, by clicking on the online store section, she quickly located the site's search function tool. When this did not immediately yield a result, she shortened the search title and was this time successful. Once she had checked her sheet to confirm it was indeed the correct title, she continued to select the format and quantity required. After doing this, she had a screen security warning prompt appear, which she did not stop to read, instead going straight through to the log in stage. She stopped after two minutes and ten seconds on the site.

This led her to the final website, Tesco. After glancing over the home page, she used the listed items to select the electrical items. On the electrical items front page, P6 entered her search terms and was directed immediately to the correct item. Selecting the item page, she smiled and whispered to herself “how cool does that look?”. She then selected to purchase the item and went through to the shopping basket screen. This then brought up the log in screen and she stopped after only fifty five seconds.

### **8.6.2 Interview Findings**

Although seemingly unconfident, P6 actually did very well on the task correctly purchasing all four items. The observations were supplemented by P6’s vocal contributions, adding more depth and creating a richer picture. This was supported by the interview responses presented below.

- P6 identified Tesco to be her favourite website of the four as she found it to be “...really easy to search and it was quick and easy to click on things”. Tesco was also chosen as the website she would feel most confident purchasing from.
- Yoox was selected as the least favourite because she felt it was “... not obvious where to click or where to look and when you searched for stuff it just didn’t come up”. This was unsurprising as Yoox seemed to cause the most frustration to P6. This was also supported by the statement that she found locating the items varied from “very easy to absolutely horrendously hard; it was alright on most of them it was just the Yoox one that gave me problems”.
- However, P6 did not select Yoox as the website she would feel least confident purchasing from, instead opting for HyVoltageAudio. This was because, like

the previous participant, she said it was not as professional looking as the others.

Although this seems counter – intuitive , it was not unexpected as the observations noted the initial shocked response of P6 to the HyVoltageAudio website. In order to examine P6’s attitude to this relationship further, the responses to question three are presented again in table 21 below.

Table 21 P6 Website Rating Scores

	<u>Amazon</u>	<u>Yoox</u>	<u>HyVoltage</u>	<u>Tesco</u>
Usability	Good	Average	Good	Good
Trustworthiness	Good	V. Good	Average	V. Good
Overall Appeal	V. Good	V. Good	Average	V. Good

P6 did not seem to focus on the usability of the website when considering its level of trustworthiness. Instead, she seemed to attach more weighting on the website’s appearance. This area was investigated further with the questions:

- When asked about the visual security aspects of the site such as assurance seals and privacy policies, P6 admitted it was not something she would look for on a site, “No I didn’t, no, oh dear I ought to do that really, is that really bad?” adding “I only remember noticing it on the Amazon site because it was underneath where I clicked”. This response highlighted her lack of confidence online as she was again seeking reassurance from the researcher.

- P6 did stress, however, that she always looked for a secure connection, "... when that I am entering my details the website has to have a little padlock in the bottom corner for a secure connection and my computer usually pops up saying you are now entering a secure connection, is this ok? if the pop up came up but said it wasn't a secure connection I don't think I would go ahead, no".

This response showed that security online was an issue for P6, with her even stating that she would not proceed with a transaction if she could not be sure the connection was secure.

- In order to determine if a website's reputation would affect its perceived trustworthiness, P6 was asked if she had heard of any of the websites before using them today and if so what type of reputation do they have? As with the majority of the other participants, she was aware of Amazon and Tesco and it was mainly positive things that she had heard. P6 also admitted that she had used Amazon before, but that the experience had not been particularly positive, "...things take absolutely ages to get delivered and that really annoys me. I bought some of my coursework books from there last year and they didn't arrive till the end of the year, so it wasn't overly useful".

This negative view could account for the fact that even though P6 had previously used the website, and so the transaction process was familiar to her, she had still not selected the site to be her favourite or the most trustworthy.

- As P6 identified delivery issues to be a previous problem in her past online shopping experiences, she was asked if she thought the type of product sold would affect her future decision to purchase online. “Yes to a point in that I tend to buy things that are not that expensive on the Internet because although I am quite happy and fairly comfortable with it, I tend to freak out a bit that they might get lost in the post as I have had a couple of items go walkies so it tends now to be little things like CDs, DVDs and books, but nothing majorly big like a DVD player”.

Her response suggests that the negative experiences have created a perceived fear of not receiving the items, and so have affected her future purchasing decisions online.

- In order to discover if this would deter P6 from buying online again, she was asked to rate the shopping experience using the web, compared to the traditional high street experience. Although P6 did prefer the high street experience to online shopping, it was because of the positive experiences associated with the high street shopping process rather than any negative experiences online. P6 expressed that “It’s convenient but its no where near as much fun!” adding that “... it doesn’t beat going into a shop, especially with clothes, and trying things on so if I had a choice I would still go high street shopping, just for the experience, am I a freak?”

This final statement from P6 reflects the need to recognise that many consumers, who have purchased online, may still prefer to purchase the majority of items in a traditional shopping environment simply because they enjoy the shopping process.



## **8.7 Participant Seven**

The final participant, P7, was chosen from the retail sample as being representative of an online shopper. She is a female in the 20's age group, single and works as a primary school teacher. Again the full transcript from the interview can be seen in appendix A4.7.

### **8.7.1 Observation Study Results**

P7 opened the Amazon website and firstly selected DVD section. She then used the search option which presented her with a screen of various DVD titles, which she then scrolled through down to the bottom of the list. After referring to her task sheet three times, and looking back at the screen, P7 entered new search terms and this brought up a new screen with more non relevant popular titles. She tutted at this and then went back to the original screen. After scrolling down the original list again, an item was selected. She looked at the product specification and then added the item to her basket. She then selected the checkout option and was asked for her email address to log in as a registered user, which she did and was taken through to the payment options where she stopped at exactly three minutes. Although seemingly unfamiliar with the design of the website, the researcher noted that P7 had used Amazon previously, due to being registered on the website.

P7 seemed similarly wary upon entering the Yoox website. After carefully looking over the screen, she began scrolling down the designer names list before selecting the Male section. She then used the drop down function and scrolled down a list of designers, whilst constantly referring to her task sheet. She then deselected the drop

down approach, instead utilising the search option. This presented her with a list of various items, so she used the drop down boxes again to specify accessories.

This resulted in two matches. However, neither was correct. P7 then went back to the original list and re-searched the drop down list of designer names. This brought up a new results page. Again, it did not contain the correct item and so she went back to the search option and re entered her search terms which took her back to her original screen of various items. At this point, she turned to the camera and laughed nervously.

She then proceeded to search through all the pages of items whilst playing with her hair and began to sigh loudly. She selected an item from the list and went to the specific product page, and after looking over the page briefly, selected add to basket.

The screen then gave an error message and she was asked to select a colour. She then used the drop down box and selected the first option and proceeded to checkout. This opened the personal details screen. At this point, she glanced over the screen and stopped after a total of five minutes and twenty seven seconds. Although P7 spent a relatively short amount of time on the Yoox website, she seemed uncomfortable with the process and once the correct item could not be located quickly, an alternative item was selected. This suggests an element of embarrassment as the participant could have just moved on to the next website; instead the incorrect item was knowingly selected.

The third website was HyVoltageAudio. P7 looked over the initial screen and began scrolling down, and she continued to scan the screen for approximately thirty seconds before she then selected an option from the list. This screen contained another list and

she scanned up and down the list twice before consulting her task sheet and selected the second listed item to proceed. This resulted in a screen with a long list of items which she quickly scrolled down to see the length and loudly tutted. She then scrolled back to the top, referred to her list twice again and selected an item. This brought up another page of listed items which she slowly scrolled down, constantly reading the headings and she continued to scroll through the next six pages of items. On page six, her frustration became obvious as she lifted the mouse up and banged it down on the desk as she was scrolling. On page seven, she began shaking her head and cleared her throat, scrolling through another two pages at which point stopped and looked at her list again. She returned to the screen and when opening the next page, asked "am I doing it right?", similarly to the previous participant she was expressing her insecurity that it was her that was somehow incorrect. After this page, she selected the first item and went straight into the purchases page, even though it was again the incorrect item. This opened the personal details page and she was still clicking continue, even though she had not looked up at the screen. This refreshed the page, highlighting the items she needed to fill in. At this point she stopped. The total time spent on the site was four minutes and thirty five seconds.

Upon opening the final website, Tesco, P7 began scrolling down the listed options and quickly selected the electrical items. She then went straight to the search option, referred to the sheet and typed in the item on the list. This immediately brought up only one result which was the correct item. She selected the item's specification and read through the detailed information. Once completed, she went back to the original item screen and selected the checkout which brought up the sign in page. At this point, she stopped after only one minute and eleven seconds.

### **8.7.2 Interview Findings**

The observations seemed to highlight a number of confidence issues of P7. The interview responses were subsequently analysed to determine what had contributed to these issues.

- Tesco was P7 preferred website, due to its pleasant appearance and ease of use. However, Amazon was selected as the most trustworthy website as P7 had used it before.
- HyVoltageAudio was again selected as both the least favourite and most untrustworthy website. P7 stated that this was mainly due to the appearance of the website, "... I did not like the look of it as soon as I got onto it, it looked like nothing I have been on before and there wasn't many options of how to search, there wasn't a search box as far as I can remember that you could just put the title in that you wanted so I ended up looking via products and it just wasn't very helpful". She continued "Very dark, black background and white writing, just a lot of letters really too much going on. It is not the easiest of sites to access when you have not been on it before, where as if I had not been on Tesco it is not that difficult to find what you wanted".

This statement highlights the impact the design of a website has on its perceived level of trustworthiness; when later in the interview P7 was unable to recall the name of the website, she started to simply refer to it as "the black one".

In order to determine if website usability is also linked to the level of trustworthiness perceived by the consumer, P7 responses to question three are again presented for comparison in table 22 below.

Table 22 P7 Website Rating Scores

	<u>Amazon</u>	<u>Yoox</u>	<u>HyVoltage</u>	<u>Tesco</u>
Usability	Good	Average	Poor	Good
Trustworthiness	Good	Good	Poor	Good
Overall Appeal	Good	Average	Poor	Good

Although P7 seemed to be less generous in her ratings than the previous participants, she identified that she felt the items were in fact easy to locate with the exception being on the HyVoltageAudio site, "...Yeah it was easy just not the CD one". The responses again seem to support the suggested relationship between the perceived usability of a website and its level of trustworthiness. This was further investigated in the following questions.

- When asked about the visual security aspects of the site such as assurance seals and privacy policies, P7 admitted that she did not actually know what an assurance seal was and so was unsure what to look for. She also seemed unsure of what privacy policies actually contained, making the statement "That's what like the conditions, I know that they are in there but I never usually check. If I was on a new one I would do yeah, just have a scroll down, but not when I have used them before".

These responses showed that even this individual, who had purchased online previously was still unsure what security reassurances are available on websites, and as a consequence, did not bother to look for any of these when purchasing online. This finding again supports the theory that visual cues relating to security on a website are not of crucial importance to consumers when contemplating purchasing an item online.

- However, P7 claimed that she could recognise when a website was secure and had noticed the icon appear on two of the websites during the task.

This suggests that nevertheless consumers are still concerned over security issues when purchasing online, as even though P7 had admitted in the previous question response that she was unsure what to look for in regards to a websites security assurances, she was not only highly confident that she could identify when a website was in fact secure, but had also noticed the relevant icon appear when undertaking the task. This showed that P7 had recognised the icon when it had appeared and had noted its presence on two of the websites, which were unsurprisingly both websites she went on to identify as being trustworthy. Although this presents a contradictory pair of results, one possible explanation is that P7 was embarrassed at her lack of knowledge and so was trying to impress the researcher in her responses.

- This subconscious recognition of certain visual cues was reflected in the fact that P7 identified the shopping cart programs used by websites as not only making the process easier online, but she felt it increased her level of trust in the website, "... it makes it more sequenced, you know what your doing, you

know what your putting in and the details you are giving them and it does make you feel more secure”.

- This issue of perceived security concerns when purchasing online was also hinted at with P7’s response when asked if she had used any of the websites before today. P7 had used Amazon previously and had created an account online. She had noticed that with HyVoltageAudio you could enter as a non account user, which she did not consider was good policy, “...I don’t think it is very good, I would rather they have my details because then they have they have got a history of you, otherwise you could just be anybody”.

Although this raised the issue of security online, it offered an alternative viewpoint that as a consumer, P7 was quite happy to give her details to an online store, in fact preferring to create an account with them then to log on as a guest user.

- Intriguingly P7 also expressed an opposing view to the other participants when asked if the type of product sold would affect their decision to purchase online, claiming that she would not buy items such as CDs online. Instead, shopping online was good for locating rarer items that may be unavailable in traditional stores, “Well I would look online for most things but wouldn’t spend hours looking for a cd, as you could just go down to a cd shop and buy it as there is so many, but I would be quite willing to search and look if I couldn’t find it, as they ship from America, and get stuff that I couldn’t get from the shop over here”.
- Finally, when asked to rate the shopping experience using the web, compared to the traditional high street experience, P7 acknowledged that she found

shopping online to be much easier and therefore saved her a “lot of bother”. However, P7 agreed with the view of P6 that she still would prefer to shop in a traditional retail environment, due to the enjoyment of the actual high street shopping process, “I would rather go window shopping any day of the week than sit in and shop online. I like to see, feel, touch and see if I can get a bargain as you don’t really get them on a website”.

Although comparisons were drawn between participants’ responses, when analysing the data collected from the qualitative research, in order to fully evaluate the results and use them to test the model, a more detailed analysis needed to be undertaken. This evaluation is presented and discussed below.

### **8.8 Evaluation of the Qualitative Results**

The next stage of the analysis was to manually analyse the discursive text, presented above, and draw out any apparent relationships or patterns between the participants’ responses. As the purpose of the findings from the qualitative research was to test the model, this process was structured in a way that allowed all information generated to be directly applied to the model, so any necessary revisions could be made.

The first stage of the process was to compare the findings in terms of the identified non online and online shoppers. This was the initial stage of the quantitative analysis and seemed a logic starting point for the evaluation as the main aim of the research was to investigate deterrents to online shopping and so any differences highlighted between these two sets of responses could be integral.



### **8.8.1 Comparison of Online and Non Online Shopper Responses**

Of the seven participants selected for the study, two had not yet purchased online, that was P2 and P4. Although a seemingly low figure, this was in fact reflective of the fact that of the original survey sample of 395 responses, just under 250 respondents were identified as online shoppers, accounting for approximately 65% of the total sample. Both of these participants were female, however, the issue of gender will be raised later in the chapter, as it is an aspect within the model of trust.

The reported findings from both the observation study and the interview are now compared, broken down by each question and the responses given from both the online shoppers, and the non online shoppers.

There was no great difference in the responses from the groups when asked about which of the websites they preferred, with the non online shoppers preferring Tesco, and the online shoppers divided between Tesco and Amazon. These findings were repeated with the website they felt was most trustworthy. P4 was an interesting exception. A non online shopper, she felt that she could not distinguish between the trustworthiness of the websites. She argued that although she had a favourite and least favourite, in terms of identifying one website in particular she would feel more comfortable buying from, she argued that in her eyes they all looked the same. This response highlighted the need for recognition that in terms of perception, all individuals have their own unique processes. P4 did stress that she found all the websites unintuitive to use due to her use of dealing with information classified in a specific way in her occupation as a taxonomer. This could account for the reasoning behind her response and seems to support the theory that if a consumer finds a

website easy to use then the level of trust will increase. This link was investigated in the interview, when participants were asked to rate all four websites on their usability, trustworthiness and overall appeal. P4 felt that she could not undertake this exercise and so asked to skip this question in the interview, making a comparison of the non online shoppers' responses unavailable. However, the responses for the online shoppers were compared and the results showed a clear positive relationship between the rating given for the usability and the rating for the perceived level of trustworthiness. This did seem to be reflected in P2 response; however, as this had no point of comparison, this relationship could not be confirmed.

The websites all received generally good ratings apart from HyVoltageAudio, which received a rating of poor for both usability and the perceived level of trustworthiness from all but one of the participants. This exception (P6) may be explained by the fact that P6 was one of only two of the participants who successfully located the item from this site in the observation study. These poor scores were reflected with the responses from both groups identifying the HyVoltageAudio website as their least favourite website. Again, only P6 was the exception to this as she selected the Yoox website instead. However, all participants who answered the question in the interview chose HyVoltageAudio as the website they would feel least comfortable purchasing from, and the majority of the respondents stated that it was the website's poor design and unprofessional appearance that was the reason for that view. This positive relationship between the website's appearance and the perceived level of trustworthiness does support previous research findings, presented in the literature review chapter, that in order to be a success and reassure consumers to purchase from their website, organisations need to ensure the website is perceived to be of high quality and

professional in its appearance. However, the suggestion that visual cues on a website such as assurance seals and posting the organisation's privacy policies can have a positive affect on a consumer's perceived level of trust, thus positively influencing their purchasing decision, was not supported by the interview and observation findings. There was complete agreement between both the non online shoppers and online shopper group that both assurance seals and privacy policies made no difference to them when contemplating purchasing online, with all respondents' agreeing that they would not even bother to see if either were present on a website. This was supported by the behaviour observed. Intriguingly, when participants were asked if they could recognise if a website was secure, there was a more noticeable divide within the two groups. The online shoppers were all confident that they could recognise when the transmission of details on a website was secure, represented by the yellow padlock symbol. However, the majority of the group stated that they would still not bother to check that the symbol was present before completing a transaction online. A similar pattern was present within the non online shoppers group, as the participant who could identify when a website was secure also stated that if she was to purchase online in the future, the absence of the symbol would not prevent her in completing her purchase.

Another visual aspect of a website that has been argued to positively influence a consumer's purchasing decision is the shopping cart application. This is where consumers can place products they have viewed online in a virtual shopping basket to be held until they are ready to finish browsing in the online store and head for the checkout. Previous research findings have been divided on whether consumers feel this application makes the online shopping process easier for the consumer and adds

familiarity by replicating a technique used in a traditional store. A majority of the participants in this study believed that the shopping cart program made the transaction process online easier and so positively influenced their view of the website. However, in the non online shopper group, there was an equal divide between the respondents' opinions.

This pattern was repeated with the responses gathered from the question enquiring if the type of product sold would affect a participant's decision to purchase online. The online shoppers all agreed that the product sold by a website would make a difference to them when contemplating purchasing an item online. However, again there was an equal split between the participants' in the non online shopper group. One possible explanation for this is, as for the previous question on the shopping cart program, the response is affected by whether the participant had some experience using websites to generate their opinion on these aspects. One could argue that as non online shoppers, this group could have more limited experience of interacting with websites, and so cannot really be asked to make an informed decision as they are unfamiliar with the processes involved. This relates back to the issue of a participant's knowledge and perhaps more importantly, their perceived knowledge, which can either positively or negatively impact on their confidence online, as noted in a number of participants' behaviour whilst undertaking their tasks.

This issue of previous knowledge is furthermore linked to another aspect contained within the trust model, the notion that external influences, such as an organisation's reputation, can have an impact on a consumer's decision to trust the organisation's online presence and so affects the decision to purchase from that specific website. As

this was a factor identified in the trust model, the inclusion of a question to explore this factor was viewed as necessary for inclusion in the interview. This was also a reason for the inclusion of the Tesco website in the observation study as it had been under increased media scrutiny in the weeks leading up to the observations and interviews. The purpose of the question was to determine if the participants had been affected by the stories in the media and if this was reflected in the responses given both when discussing the Tesco website and also when specifically asked about the reputation of all of the websites. The participants were firstly asked if they had heard of any of the websites before taking part in the research. Although all of the participants stated that they were aware of the Tesco brand, but none gave any reference to the recent negative press. The participants in the online shopper group all also stated that they had heard of the Amazon website. This further supported the original reasons for selecting Amazon for the study as being representative of an e-brand, and a positive example of a successful, well established website.

The participants were asked of those websites they were aware of, what type of reputation did they perceive the websites to have? The respondents all agreed that the websites were perceived to have good reputations and they seemed unaware of, or indifferent to, the negative publicity Tesco had received only a few weeks before. However, when asked to expand on this the participants seemed to have trouble separating Tesco as a brand they knew from the local supermarket and the Tesco website. This finding reflected another area of previous research studies that believe an organisation that already has a strong high street presence is more likely to succeed online than an online only company. This could be considered a common sense argument, despite the success of online only stores such as Amazon and Ebay, and

does also fail to take into account the negative experiences that a consumer may have had with a specific high street store that may prevent them from even going online to look at the organisation's website. Considering all the findings, there did appear to be a positive relationship between an organisations' reputation and the consumers' decision to purchase online, as represented in the trust model.

The final question in the interview asked the participants to rate the shopping experience online compared to the traditional high street shopping experience. As anticipated, the non online shoppers agreed that they preferred to shop on the high street. When asked to expand on this, they stated that a major reason for this was the fact that when shopping on the high street, they can see and feel the tangible product before purchasing. This need to have the physical item present has been suggested to be a major deterrent to online purchasing, with previous research findings by Shek et al (Shek *et al* 2003) stating that consumers may be apprehensive about buying something they cannot see, touch or feel. As the non online shoppers identified this aspect of the high street shopping process as being of importance to them, this finding would seem to be supported. However, when comparing these responses with those of the online shoppers, the majority of regular online shoppers, agreed with the non online shoppers, stating a preference for shopping in the high street over shopping online due to the ability to be able to see the items before purchasing. Although two of the participants did prefer to shop online as they felt it offered greater product choice and was easier to undertake. This result, also identified by the non online shoppers, shows that for some participants, the lack of a tangible product, although recognised as important, would not deter them from purchasing online.

There could be many explanations for this finding, such as the previously identified issue with the type of product that was being considered for purchase or the notion that some people simply enjoy the high street shopping process, seeing it more as a fun activity than a necessity. It is, however, important to remember that due to the small sample size used in the qualitative research; all the information collected from the participants should be viewed as indicative only of the population at large and serve the purpose of merely testing the model devised from the original, larger scale quantitative research. It is worth noting however that the findings from the qualitative research do seem to support the original findings from the quantitative, discussed in detail in the earlier quantitative results chapter.

As the purpose of the qualitative research was to test the trust model, the differences highlighted between the online shoppers and the non online shoppers opinions on the website design features, organisation specific influences and external influences; all represented in the trust model, were presented and discussed. One section of the model, the individuals' propensity to trust, had not been investigated in this part of the study, and this was the focus of the next stage of the analysis.

The individual propensity to trust section of the model looks at an individual's personal characteristics and the effect this can have on their level of trust in a website, and by implication, their decision to purchase from that website. The characteristics considered consist of: age, gender, marital status and the level of education they have achieved. As with the previous stage of the analysis, to use the findings to test the model, the differences between the online shoppers and non online shoppers had to be ascertained. however, as these are the participants personal characteristics and are not

reliant on their responses to the interview questions being evaluated, there is no need for a detailed question by question breakdown as these factors were considered before the research was conducted.

The sample selected for the qualitative research, although limited by its size, was chosen to be as representative of the population as possible by including participants of varying ages, genders, marital status and level of education. This was further enhanced by selecting participants who had previously taken part in the quantitative research and were considered to be representative of all findings overall. A summary of the participants' personal information was presented at the beginning of each participants section within this chapter and is repeated below to illustrate the difference between the two groups, the online shoppers and non online shoppers.

#### Online Shoppers:

P1 - over 50, Male, Married, G.C.S.E's. Taken from the traditional retail sample

P3 - over 50, Male, Married, PhD. Taken from email sample

P5 - under 20, Male, Single, A Level's. Taken from email sample

P6 - under 20, Female, Single, A Level's. Taken from email sample

P7 - 20's, Female, Single, Degree. Taken from retail sample

#### Non Online Shoppers:

P2 - over 50, Female, Married, G.C.S.E's. Taken from the traditional retail sample

P4 - over 50, Female, Married, Degree. Taken from email sample

It could be argued that as both of the participants in the non online shopper group are female, then men are more likely to purchase online than women, establishing gender as a factor that will impact on a consumer's perceived level of trust and online



purchasing decision. However, as discussed above, due to the limitations of the sample, these issues could not be fully explored in the qualitative research. Instead these issues were the focus of the quantitative research, and were discussed at length in the quantitative results chapter, with the focus of the qualitative research being to test the other aspects of the trust model. This was outlined in the further research required section, at the end of the first trust model chapter.

### **8.9 Implications of Results**

The findings from this part of the research were evaluated to allow direct translation onto the revised model of trust and making any further relevant revisions. This final stage of the model's development process is the focus of the next chapter.

## **CHAPTER 9**

### **TRUST MODEL 2: FINAL DESIGN**

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This chapter examines in detail the trust model development process undertaken. The aim of the research was to create a model that encompassed all the factors that were identified to have an impact on consumers' perceived level of trustworthiness of a particular website and therefore would subsequently have an effect on their purchasing decision. To fully understand the model, it is important to look back at the phases of the model design and how these were all fundamental to create the final version.

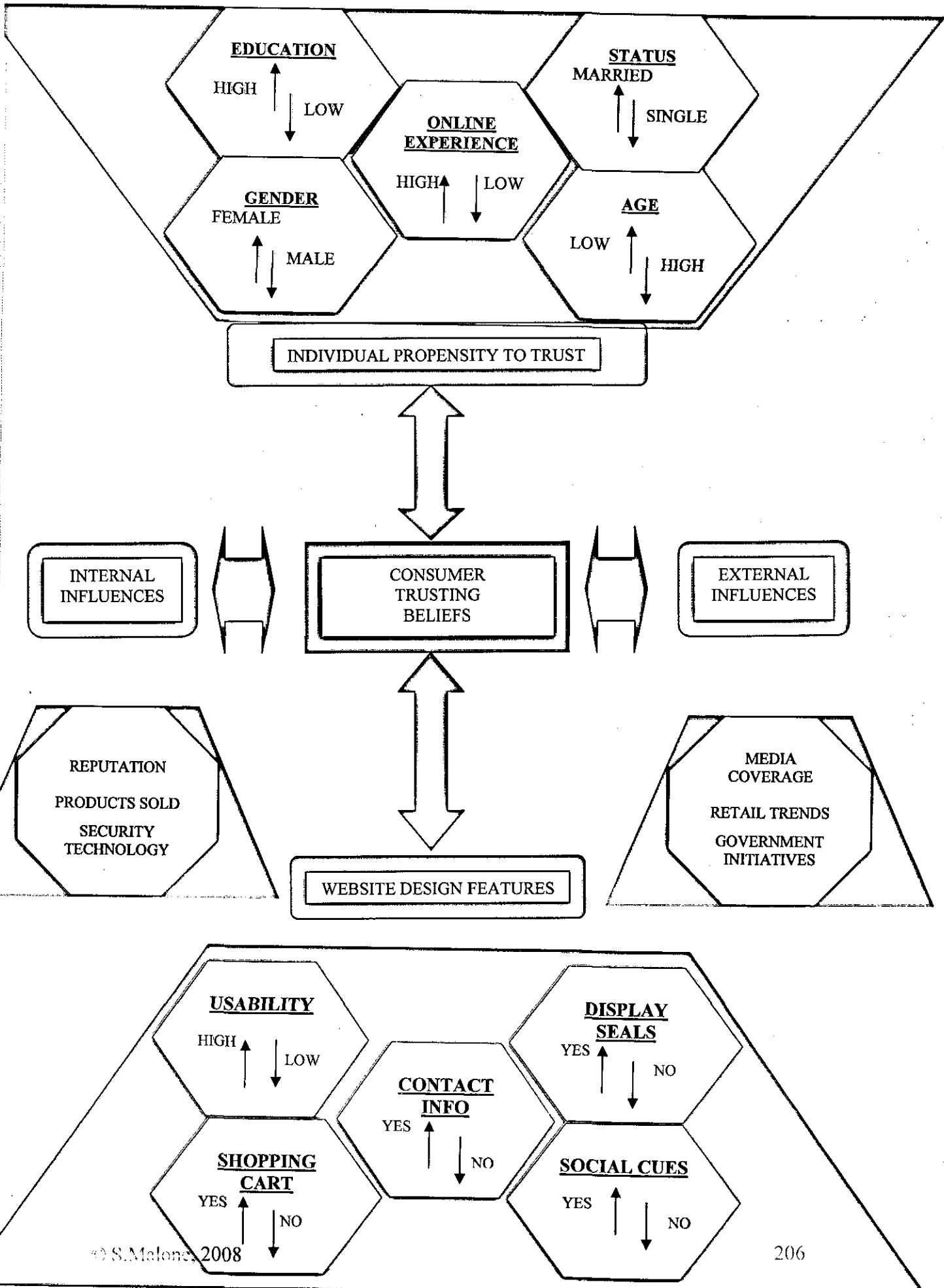
#### **9.1 Creating the Model**

It was important to identify the models of trust that already existed and critically evaluate them. This process was discussed in chapter seven, presented earlier in the thesis. The critical evaluation of the models helped to identify key areas of previous research that had been overlooked by the previous authors, and therefore began determining what factors this model would require for inclusion to fulfil the aim of the research. The critical evaluation also highlighted the need for a design, that ensured although rich in terms of the information contained, the model would still be easy to read. One previously developed model was established as a good example of a trust model, this was Egger's M.O.T.E.C model. This model was used as a guide when developing the design due to its clarity and ease of use. It was therefore determined at the outset that the model will take a similar uncomplicated design approach, making sure the model is easy to read whilst ensuring that it is fit for its purpose, which was to visually represent the relationship between the highlighted

factors and the effect they have on an individual's perceived level of trustworthiness of a website. The findings from the literature review were used along with the information gained from the pilot study to create the initial model design, simply called Trust Model version 1, which is presented in figure 56 below.

The model was to be developed in phases to reflect findings from the research as it was carried out. The initial model design consisted of two sections, a base or core and a secondary layer identifying the factors. This secondary layer was created as a transparent overlap to fit over the model core, and so would represent the layering of the model design as the development process was undertaken, allowing further layers to be added as necessary later in the research. No other model identified in the literature had this visual representation of the development process. It also added a level of simplicity, allowing the reader to be able to see the model as a whole and then focusing on each layer individually. Although various computer software packages were evaluated to make the model look more professional, these were ultimately rejected as although three dimensional software was available to simulate the model layers, it would prevent the user from the ease of flicking through the layers, made possible by the transparent overlaps. Using computer software to design the model also created accessibility, reusability and compatibility issues as, regardless of which software was selected, it would require the package to be purchased and also to be compatible with the viewer's computer operating system before it could be viewed or altered. The software option was therefore rejected as it presented unnecessary additional concerns with regards to the model design and simply viewing the model at a later date.

Fig 56. Trust Model – Version 1



The use of colour in the model was established as being vital as it allowed the model to be instantly recognisable and also differentiating it from other models. This was highlighted when comparing previous models in the initial critical evaluation, as the majority of the models were in black and white, appearing dark and lacking in terms of visual stimuli. However, the M.O.T.E.C model, which incorporated the colours blue and yellow into its design to make it appear brighter and stand out. However, one criticism is that this choice of colours was never elaborated on by the author and seemed to have been a completely random choice. Reflecting on this criticism, the use of colour in this model was carefully considered and the reasons for selection are explained below.

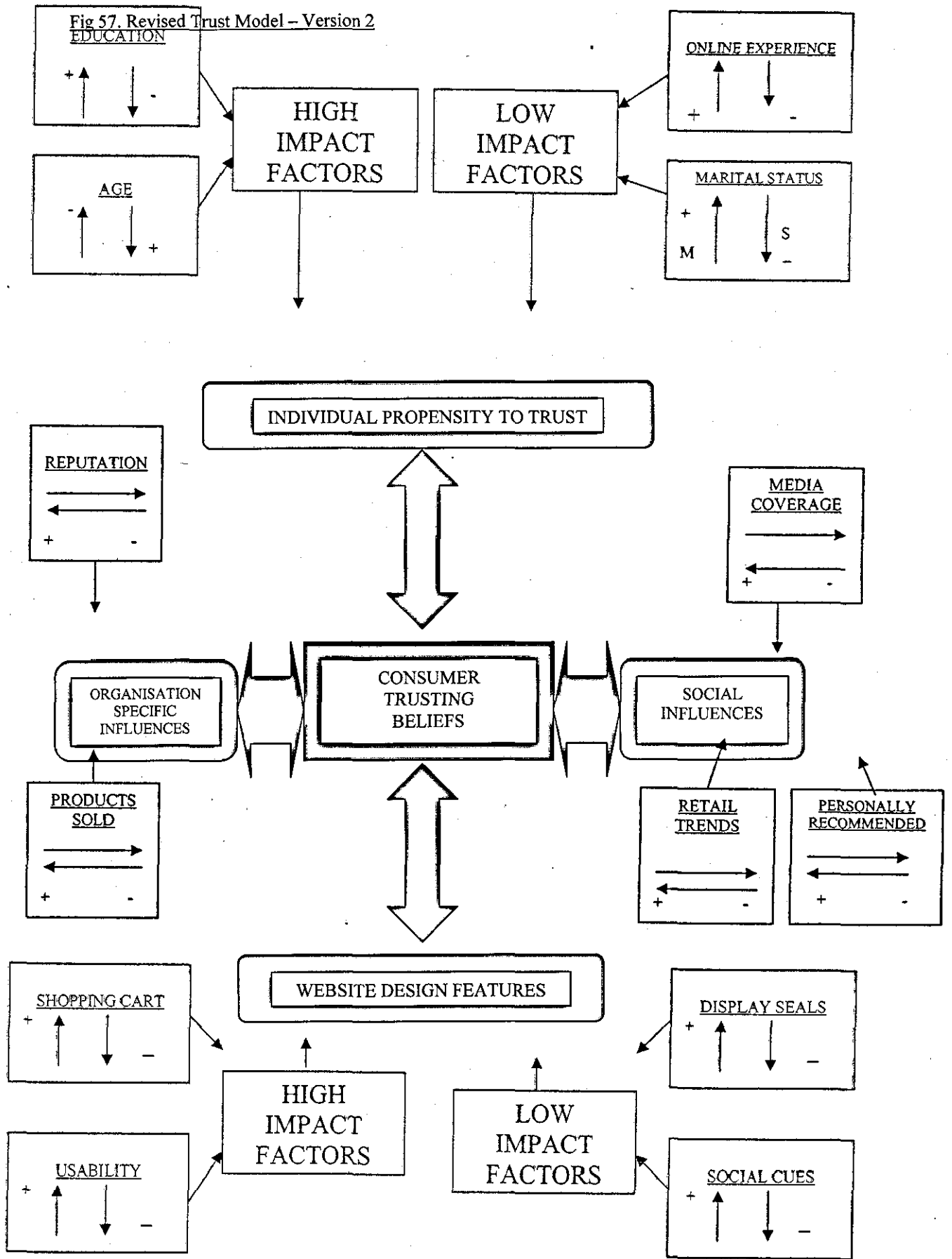
As noted above the initial model design was made up of two sections: the base and the secondary layer. The base consisted of a central core, which represented the consumer's trusting beliefs, and the four factors impacting on this, identified by the previous research findings as the individual's propensity to trust, the website design features, the external influences and the internal influences. The colour red was selected for the factors as red is widely acknowledged as a colour to show warning of a potential danger, such as the use of the colour red in road signs. The contrasting colour of blue was therefore selected as for the consumers trusting belief element of the model to show the conflict between the two sections, and as blue is also representative of calmness. This further illustrates that the blue section is what is trying to be achieved. The relationship between these factors and the consumer trust section is represented by double ended arrows; this is to visually illustrate the relationship as being "two ways", meaning that one can be influenced by the other.

The secondary layer repeats the use of the colour red to show that the new sections are expansions of the original sections from the base. The model design using the four sided shapes is a visual representation of a square, broken into pieces similar to that of a jigsaw, also represented by the use of pentagons for each factor, so that each piece can be slotted back together to create a whole. This is to represent the idea that in order to determine the effect of all factors influencing a consumer's trusting belief in a website, the factors must be broken down and considered individually before addressing their influence as a whole.

The secondary layer identifies the individual factors within each section. The level of influence each factor has is not identified; however, the use of arrows within the factor illustrates the relationship determined by the previous research findings. As an example, within the age factor, the arrow relating to low is pointing up. This is to signify that previous research findings have suggested a positive relationship between the lower the age of a consumer and the greater their individual propensity to trust. In comparison, the education factor shows a contrasting relationship with the arrow pointing up next to high. This illustrates that the findings from the pilot study suggested that the higher the level of education an individual achieves, the greater their propensity to trust and so the more likely they are to trust a website.

## **9.2 Revision of the Model**

The results from the quantitative research, presented in chapter six, were considered and the key findings were used to refine the model. This updated model was named Trust Model version 2, and is presented in figure 57 below.



The first apparent revision made to the model was the removal of the large red four sided shapes on the secondary layer. This was due to the fact that they offered no real purpose, apart from tying the separate sections of the base and the secondary layer together, and this was not considered as important as the need for more white space to be created for another key design change, the identification of high and low impact factors. This was an issue previously noted as a criticism of the initial design and so was built into the second version of the model once the impact of the factors had been determined by the quantitative research findings.

The model's design was also simplified with the replacement of positive and negative symbols next to the arrows within both the individual propensity to trust and the website design features sections. This was supplemented by single letter identifiers where required, such as M for married and S for single. This was to visually represent the weighting system attached to the individual factor and illustrate its relationship, as previously discussed within the first trust model chapter. Where the arrows are shown to be horizontal instead of vertical, this is to show that the relationship is equal to the level of input from the factors themselves, for example with retail trends. If the trend is a positive increase in consumer sales as a whole, then there is subsequently expected to be a positive impact on the consumers' purchasing decision.

Each factor contained in the revised model is now discussed, referring back where applicable to the results presented in the quantitative results chapter, so the decision behind its inclusion can be fully justified.



Another key revision to the model design is the renaming of two of the components on the model base. "External influences" was renamed "Social Influences" as this name more accurately reflects the individual factors within it and as a consequence, one factor was replaced. The factor of government initiatives was removed and the personally recommended factor was added to represent the effect a personal recommendation, such as from a friend or colleague, would have on a website's perceived level of trust, as identified by the quantitative research findings. It was necessary to remove the government initiatives factor as it was not a factor fully explored by the quantitative research. The media coverage factor was retained as it had been identified in the literature review, but would be later tested by the qualitative research findings.

"Internal Influences" was renamed "Organisation Specific Influences" as it was also felt that this name was a more accurate representation for the factors. It was therefore necessary to remove the security technology factor as this information would be something that an individual visiting a website would not be aware of at the surface level. The products sold factor was retained, due to both samples in the study identifying small ticket items, such as books and CD's as the items they would be most likely to purchase online. Reputation was also retained; however, this was again to be tested by the qualitative research findings, presented later in this chapter.

Although the website design features section of the model was also tested by the qualitative research conducted later in the study, one notable revision was made to this section at this stage. This was due to fact that the quantitative research findings highlighted an issue with the website design features section initial design. The

contact information factor was determined to in fact come under the social cues factor, and so was removed, as there was no need to duplicate this. It was also worth noting that the need for inclusion of the assurance seals factor was strengthened by the fact that that this was identified during the factor analysis stage.

Four factors were retained within the individual propensity to trust section of the model. These were separated into high and low impact factors, dependant on the level of influence they were determined to have on a consumers trusting belief, as identified by the findings from the quantitative research findings. A statistically significant relationship between both the age and level of education achieved when comparing the online and non online shoppers' responses was found. This meant that those factors were identified by the research findings as being characteristics of an individual that have a high impact on their propensity to trust.

The results from both samples found that the largest number of online shoppers was identified as being from the 20's age group. In contrast, none of those aged in their 60's or above had purchased online. The retail sample was statistically tested, as it showed greater variance between the age ranges than the email sample, and a statistically significant relationship was identified and presented in table 4. This relationship was represented in the revised model by assigning the negative symbol, representing decreased age, to the up arrow, representing increased trusting belief.

The education factor was a reversal of this, with the positive symbol, representing a higher level of education achieved, assigned to the up arrow, again representing increased trusting beliefs. This was due to the research findings from the email sample

identifying a positive relationship between the number of online shoppers and the level of education achieved, with the numbers of online shoppers increasing as the level of education increase, presented in table 10.

As online experience was considered as a possible explanation of the education level findings; it is arguable that the more educated an individual the more experience they have had with computers and the Internet in general, this was the next factor to be analysed. The findings were consistent across both samples, and identified the highest number of online shoppers to be in the 4 – 6 year's online experience category. Statistical analysis was undertaken and the results from both samples were shown to have a significance level of less than the 0.05 level needed to reject the null hypothesis, it was apparent that there was in fact a statistically significant relationship between the number of years experience online for the identified online shoppers.

The factor was therefore considered necessary for inclusion in the revised model, however, a difficulty was encountered in expressing this relationship visually as the relationship was not correlated to a general increase or decrease in the number of years experience online, reflected in a lower number of online shoppers identified in the next online experience range. This was overcome by identifying the factor to have a low impact on the consumer's trusting beliefs, alongside the marital status factor. Although a relationship was also found for the marital status of an individual, the contrasting responses from the respondents meant that the relationship was highlighted as inconclusive and so this was determined to be a low impact factor.

As the results also highlighted that gender was not considered a main factor in terms of its influence on a individual's propensity to trust, this was therefore removed from the model.

### **9.3 Testing the Model**

As previously noted the second version of the model was tested by the qualitative research. This research focused more on investigating how an organisation can reassure its consumers that they can be trusted by looking into the effects that the website design features and the organisation specific influences can have on the consumer's trusting beliefs. As outlined in the qualitative results chapter, the results from the observation studies and interviews were analysed and a number of key findings were presented and discussed. These findings were used to test the second version of the model and each section was refined in turn, importing the results from the qualitative research to illustrate the relationships determined in the qualitative results chapter, with the finalised version named the Model of Factors Affecting Consumer Trust Online (M.O.F.A.C.T.O), and presented later in the chapter as figure 58.

The design of the model was also changed with each factor labelled clearly to prevent any confusion as to what the model was illustrating. The design remained simplistic and although a traffic light system for the colour of the model was considered, the original colours were kept to ensure the model was clear and easy to read. Although it was initially planned to create a number of overlapping layers in the model design, to be visually representative of how the findings determined from each year of study were incorporated into the model, this was rejected. This was due to the fact that as

the qualitative research findings generally supported the quantitative results, there were no major design revisions to be made and so, to keep the model as clear as possible, only one layer would be needed.

#### **9.4 Final Model Design**

Each factor selected for inclusion in the revised model is now discussed, referring back where applicable to the results presented in the qualitative results chapter, to establish the reasoning behind its selection.

The findings from the qualitative research highlighted that the reputation factor within the organisation specific influences section, was closely linked to the media coverage and personally recommended factors within the social influences section. As the research findings identified differing relationships between each of the factors and its relative level of influence on a consumer's trusting beliefs, the factors were kept independent of each other and evaluated individually.

The reputation factor was established as having a level of influence on a consumer's trusting beliefs, and unsurprisingly, there did appear to be a positive relationship between an organisation that has a perceived good reputation and the consumers' decision to purchase online. This relationship was represented in the model with the up arrow assigned to the good reputation scale.

The research findings for the media coverage factor was anticipated to identify a similar relationship to that discussed above for the reputation factor, due to the close links between the factors, as noted above. However, a relationship could not be

determined by the findings, as the participants seemed to be unaware of the negative publicity a website featured in the study had received only a few weeks before, and so its influence could not be evaluated. This factor was not, however, removed from the design as the factors influence could not be dismissed, due to the lack of awareness shown by the participants in the sample.

As previously noted the main purpose of the qualitative research was to test the model, more specifically the factors that were unable to be fully tested by the quantitative research, identified within the website design section.

The only major revision was that the privacy policy factor was replaced by a new factor identified by the qualitative research findings, defined as professional appearance. Although a general term used to define the perceived quality of website design attributes, the factor was considered necessary for inclusion in the model as a positive relationship between the website's overall appearance and the perceived level of trustworthiness was established. This was reflected in the result that all of the respondents identified the HyVoltageAudio website as being the least trustworthy, with the majority of the respondents stating that it was the website's poor design and unprofessional appearance that was the main reason for that view. The factors influence on the model was visually represented by the horizontal arrows to show that the relationship is equal to the level of input from the factors themselves, as discussed earlier in the chapter.

Although the qualitative research findings suggested that the presence of either a third party assurance seal or organisations privacy policy on a website would have no effect

on a consumer's perceived level of trust, only the privacy policy factor was removed from the model. This factor was removed because of the strength of the qualitative research findings, with all participants' agreeing that even when the policies were displayed on a website they would not even bother to read them. However, the assurance seals factor could not be removed due to the opposing results offered by the quantitative research findings. As assurance seals was identified by the factor analysis, it was considered necessary to run further analysis on the quantitative results. The results from the statistical analysis determined that there was in fact a statistically significant relationship between the levels of agreement that the presence of an assurance seal on a website would have no effect on the consumer's level of trust for the online and non online shoppers, presented in table 23 below.

Table 23 Chi Square Results – Assurance Seals No Effect & Purchased Online

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	45.892(a)	4	.000
Likelihood Ratio	51.080	4	.000
Linear-by-Linear Association	14.275	1	.000
N of Valid Cases	395		

The majority of online shoppers were determined to disagree with the statement, illustrated below in table 24, strengthening the argument to retain the factor.

Table 24 Purchased Online &amp; Assurance Seals no effect Crosstabulation - Retail Sample

## Purchased online? \* Assurance seals no effect? Crosstabulation

		Assurance seals no effect?					Total
		Strongly agree	Inclined to agree	Neither	Inclined to disagree	Strongly disagree	
Purchased online?	Yes	8	38	87	110	10	253
	No	1	25	92	24	0	142
Total		9	63	179	134	10	395

After consideration of all the findings the factor was retained in the model, however, in order to address the opposing results found, it was identified as a low impact factor.

In contrast, the shopping cart program remained a high impact factor as the majority of the participants in this study believed that the shopping cart program made the transaction process online easier, positively influencing their level of trust in the website.

The usability factor also remained a high impact factor as a clear positive relationship between the rating given for the usability and the rating for the perceived level of trustworthiness was found in the research findings, and was illustrated in the model again with the assignment of the up and down arrows.

One limitation of these findings that needs to be acknowledged is that as the non online shoppers group could have more limited experience of interacting with websites, it could be argued that this group cannot really be asked to make an informed decision, due to their unfamiliarity with the processes involved, and this was reflected in the observations of this group participants' behaviour whilst undertaking their tasks.

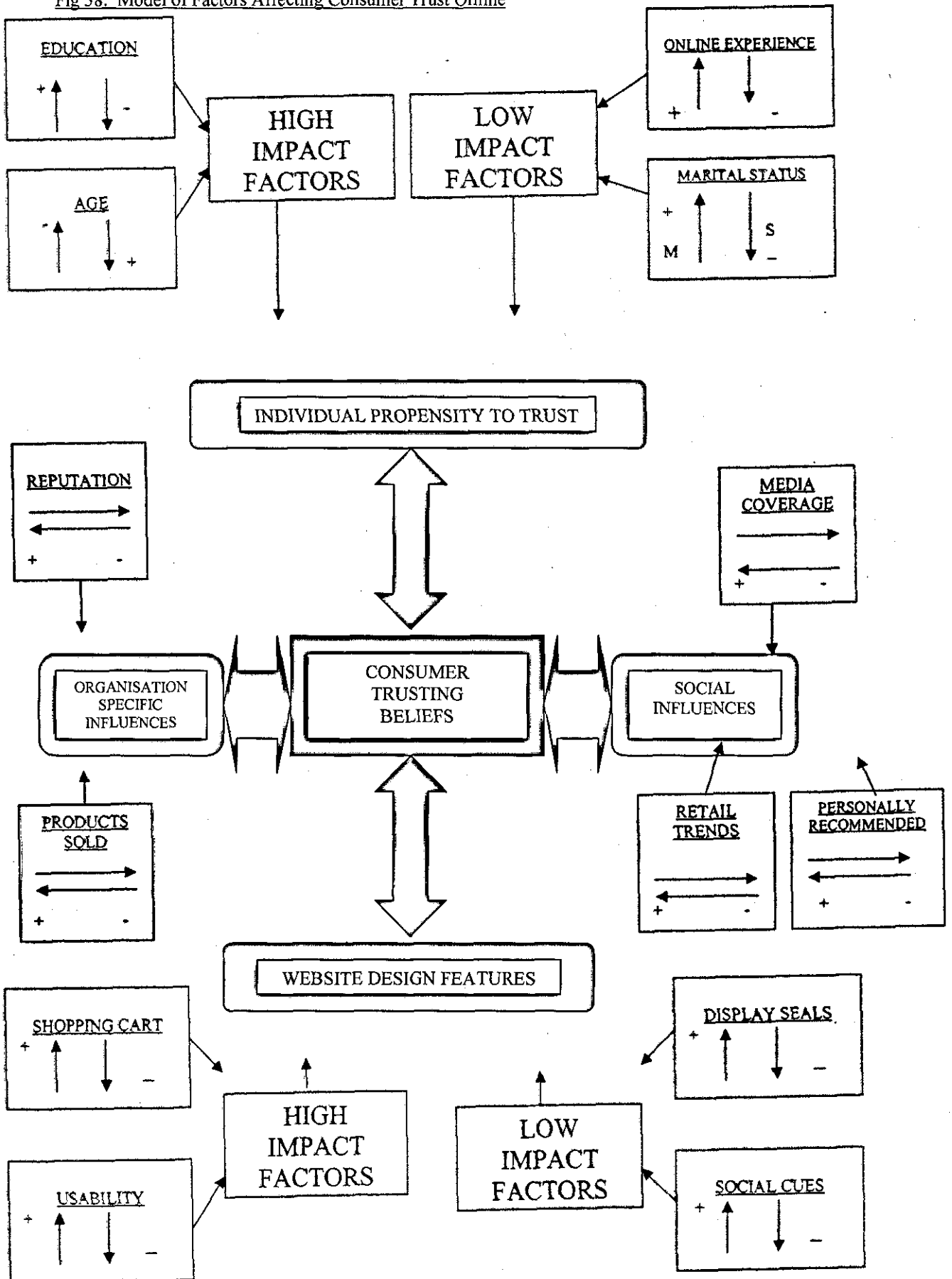


As seeing the tangible product was identified by the research to be an important factor it was contemplated if this was necessary for inclusion into the model, however, this was rejected as although it was determined as a factor that could potentially affect a consumer's purchasing decision, it was not in a fashion where anything could be done about it, as it is inherent in e-commerce by its very nature, and so was not considered relevant for inclusion.

Although the retail trends factor was also not able to be investigated by either the qualitative or quantitative research, it remained in the model as it was considered to be something that would sub-consciously affect all consumers.

The final design of the trust model, is shown below in figure 58.

Fig 58. Model of Factors Affecting Consumer Trust Online



### **9.5 Implications of the Model**

The aim of the research was to create a model that encompassed all the factors that were identified by the research findings to have an impact on consumers' perception of the trustworthiness of a website and, by implication would have an impact on their purchasing decision.

A model has been created that represented all the factors identified in the research to have an impact on the consumer when contemplating purchasing online. This model also shows the relationships determined by the research findings and highlights which factors have a greater impact than others. As the final model design encompasses all the potential influences on the consumer, it is considered to be unique as previous models of trust, identified in the literature review chapter, tend to have either focused on one particular area or failed to visually illustrate the relationships identified by the research findings.

The model was designed to be used by an organisation as a guide when creating its website. It addresses all the key areas of concern, identified by the consumers themselves that an organisation need to consider when creating an online presence.

The model should be considered at the initial stage of the marketing process alongside the identification of the target audience.

The conclusions and recommendations drawn from evaluating the research process as a whole are presented and discussed in the following final chapter of the thesis.

## **CHAPTER 10**

### **CONCLUSIONS & RECOMMENDATIONS**

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This final chapter of the thesis looks back over the research study and critically evaluates the research process, from both the researcher's reflection of how the research study developed and its perceived areas of success, to how successful the research study was in fulfilling its original aims and objectives.

#### **10.1 Evaluation of the Research**

Overall it was felt that the research achieved all that it had set out to accomplish. The results presented in the quantitative analysis chapter detailed all the results that had obtained a statistical significance level of less than 0.05 and so the null hypothesis, which contributes any result found to be down to chance, could be rejected. This meant that the research was able to retain the experimental hypothesis, outlined in the introduction chapter, that it is in fact a lack of consumer trust in online transactions that is the dominant inhibitor to the expansion of B2C e-commerce in the United Kingdom. This was due to the fact that security concerns were still perceived to be the main barrier to e-commerce, and this was identified by the consumers themselves. Although an important issue to consider is that these results could be considered indicative and therefore was only representative of the sample, it was an important achievement for the study as it meant that the main aim of the research had been achieved. The results reinforce previous findings from earlier studies such as Cheskin's *Online trust survey* (1998), and highlight that even though technology has vastly improved since Cheskin's research was conducted in 1998, offering superior

security techniques and a significant yearly growth in e-commerce since then, consumer confidence has not.

The research findings also acted as validation of the methodology that was selected. The fact that the statistical analysis showed a significant difference between the responses collected from the retail administered surveys and those collected from the email sample showed that it was necessary to have both methods of delivery. This was also recognised to be an important aspect of the study design in the results analysis, when comparisons were necessary to be drawn between the two samples for the non online shoppers and online shoppers, especially when addressing issues relating to security.

The research findings were further validated with the supporting research findings of Chadwick (Ennew 2003, p.135). He proposed a framework of six categories that he argued could be used to determine if an e-retailing organisation could be trusted. These were: "seals of approval", brand fulfilment, navigation (the way a customer finds their way around on the web site), presentation and technology. Five of these were factors identified by the research findings to influence a consumers level of trust in a website, and so were incorporated into the trust model design.

Another point of success to highlight is the findings which suggest that staying in education longer can have a positive affect on a consumer's decision later in life to purchase online. This was recognised as an original benefit of the study as it was identified as an area that been neglected by previous research. It had been considered by the researcher a necessary aspect for inclusion in this study, as it could directly affect a consumer when contemplating purchasing online, and so could be a perceived

barrier to them. This is now recommended as an area for further research, with one area of investigation suggested into who taught the participants how to use the Internet, for example if self taught participants have a lower propensity to trust online vendors.

### **10.2 Meeting the Aims and Objectives**

One well accepted measure of success when determining if a research study has been worthwhile or not is to consider if the original aims and objectives of the study have been met. The original research aims and objectives, as set out in the introduction chapter, are now presented and reviewed.

- The main aim of the research was to establish and understand the role of consumer trust as a barrier to the expansion of B2C e-commerce in the United Kingdom.

This was achieved by the study in the first instance by examining the findings from previous research in this area collected in the literature review. As the literature review process was ongoing, the researcher was kept fully up to date on any new findings and similar research that was recently published.

The findings from the quantitative research conducted in the study also contributed to achieving this aim it was clear that both the participants that were identified as currently shopping online and the non online shoppers had concerns over security when purchasing online. Those security concerns were mainly focused on the consumer fears when giving their credit card details to an online store. The

participants from both samples were in agreement that they felt uncomfortable when handing over their payment card details online. This highlighted a perceived fear that somehow their personal card details could be misused or that they may be paying for goods that they will not actually receive. This relates back to the theories of trust proposed by Sako identified in the literature review chapter (Lane & Bachman 1998, p.217) . Sako stated that in order to gain a consumer's competence trust, an organisation must fulfil its commitments to the customer and reassure them that it will behave responsibly with sensitive personal information such as their credit card details. However, this higher level of trust can only be gained by personal experience, and so every organisation is reliant on the initial goodwill trust shown by consumers. Therefore, if a consumer has security concerns over a particular website and subsequently feels that this initial goodwill trust cannot be fully given, then it is this lack of competence trust that will prevent them from completing the transaction process online. Consequently a lack of consumer trust was established as the main deterrent to B2C e-commerce in the United Kingdom.

- This research aimed to gain a better understanding of consumers' perception of e-commerce today and how those beliefs have been formed through investigating attitudes to e-commerce; there was an emphasis on the barriers consumers themselves determine as being the main deterrents to online purchasing.

This aim was achieved mainly due to the detail that was taken with the design of the survey used in the quantitative research. The questions were all designed to extract the required information for meeting the aims of the research and by including a likert

scale type question, which got the respondents to rate their agreement to a series of statements, the consumer attitudes to e-commerce overall could be determined. This style of question also allowed the consumers who had not yet shopped online to identify what they felt was the main barrier to e-commerce was. This was identified as being the issue of security.

The original objectives are now presented in turn and reviewed.

- To review the literatures of trust, Internet security techniques, consumer purchasing behaviour and of information needs

This was completed in the initial stages of the study and subsequently acted as a base for both the design of the research and the development of the trust model.

- To build a model of the factors that affect consumers' perceived trustworthiness of websites when making purchasing decisions on the Internet

The model was developed in two stages. The initial stage utilised the findings from the literature review discussed above and the results from the pilot study to identify the factors that were necessary for inclusion in the model of trust. This first design was named version one and is presented in the first model chapter of this thesis.

- To test the model by means of a consumer perception survey

This was achieved with the research findings from the quantitative research.

- To refine the model, and then use observational studies to test consumer reactions to an online shopping scenario, using a special selection of web



sites that should have (based on the model) a positive or negative affect on consumers' trust.

This was achieved by using the findings from the observation studies and interviews conducted as part of the qualitative research to test the model and make the final design revisions. This process was outlined in the second trust model chapter.

- To draw conclusions and make recommendations

The results from both stages of the research were analysed and evaluated and both this chapter and the results chapters previously identified allow the conclusions to be drawn, discussed and presented.

### **10.3 Limitations of The Research**

As established in the previous section the results from the research did fulfil the original aims set out in the introduction by investigating consumer views of e-commerce and using those findings to establish that security concerns are the main deterrent to online shopping. It is important to acknowledge there were limitations to the research.

One area of concern was in the questionnaire design. Although the questionnaires were carefully structured, there were a few problems with the selection of responses offered to the respondents. In the questions relating to security concerns, the respondents were asked to rank a list of statements. The responses were constructed this way in the hope that the main deterrent would emerge through being ranked first. However, in hindsight, the responses should have been listed, making the respondent select one from the list of options instead of ranking them. This would have made the

data much easier to analyse and also prevented the problems with respondents who ranked more than one option the same. In spite of this problem security concerns did emerge as the main deterrent as there was a significant difference between the responses from online shoppers and non-online shoppers found, suggesting that it is security concerns preventing the non-shoppers from purchasing online. Another difficulty encountered is that as the questionnaires were designed for two different samples, the questions included were sample specific. This meant that although the majority of the questions were that same, some questions were included on one questionnaire and not on another, preventing a complete comparison to be made.

Another identified limitation of the qualitative research was the small sample size. This low number of respondents prevented a detailed comparison from being drawn between the online and non online shoppers. This was mainly due to time limitations not only when conducting the research but when analysing the results, as this had to be done manually due to the data generated being qualitative. As the sample was an opportunity sample, another recognised issue is that the researcher was dependant on volunteers. This was particularly relevant in relation to the observation studies. These concerns were addressed by the selection of a seven participant sample, reflecting the sample size used in focus groups and the pre-selection of respondents using the original survey responses to try to make the participants representative of the sample at large. The research was split into two tasks, an observation study of a online shopping task comprising of a pre-determined shopping list from a set of pre-selected websites and a semi structured interview. One limitation of the research is that as the shopping task involved the pre-selection of both the items and websites, it may not be replicable in later years. In order to reduce this the survey instruments are presented

as appendices to this report and the justifications for the websites are explained in chapter 7 of this report, so that if necessary they can be substituted.

Overall, the main limitation of the research is the time it took to complete the study. The area of e-commerce is so dynamic and new technologies and research are constantly becoming outdated, so it is important to recognise that the study provides a snapshot of the situation as it was in the United Kingdom from 2003 – 2006, when the main research activity took place. In order to keep the research current, the literature review was ongoing, enabling the researcher to keep updating the relevant sections as new research findings were being published. One drawback of this is that there needs to be a cut off point established by the researcher, and for this research, this was selected as February 2008.

### **10.4 Recommendations**

Based on the research findings, the following recommendations are made:

All businesses need to invest in up to date security applications to further reinforce the message to consumers that the business is committed to keeping their online transactions secure. This will give those that have invested a competitive advantage, as they have differentiated themselves from the other numerous online businesses and openly addressed the concerns over security. Examples of these technologies, such as the Verified by Visa initiative, are presented in the methods to overcome the problem section of the literature review chapter. However, it must be made clear that the main issue for organisations will be communicating this investment to promote the schemes to its potential customers and highlight the benefits of the technology to them.

One method many banks are using to reassure their customers that they will be safe when buying online is online fraud guarantee. This not only combats the fear over misuse of sensitive financial information, but also the growing concerns over identity theft, as discussed in the literature review chapter. The credit card company Capital One launched an aggressive television marketing campaign in June 2007 to inform potential customers that they have in-house specialists to handle any online fraud or identity theft issues. This set them apart from their competitors and reflected the need to reassure consumer confidence in this area.

The inclusion of the Reputation factor in the model highlights the need for businesses to incorporate basic customer relations into their e-commerce strategies, helping to both raise consumer awareness of the benefits of online purchasing and reduce the security concerns. Raising brand awareness will also be a vital part of this, as the qualitative research found that participants that were aware of a brand name before the task, had a positive impact on the perceived level of trust of that brand. One way to maximise the benefits of this is for online only businesses to open physical stores to support their online presence, a view supported by the research findings of Srinivasan (Srinivasan 2004, p.69) that showed the existence of a bricks and mortar presence for an e-business facilitates consumer trust.

The research findings from the shoppers who were identified as still shopping in the traditional retail environment agreed that they felt the worst aspect of the shopping process were the crowds. This highlighted a potential marketing opportunity for online businesses to exploit by promoting the lack of such social annoyances as one of the many benefits of online shopping, and was incorporated as an element of the final

trust model. This could be an important factor to use when marketing an online store to consumers and may be the reason behind an increase in the number of online shoppers at Christmas, as although sales figures will generally go up at Christmas due to increased spending on presents, Christmas time is notorious for increased footfall through stores resulting in long queues and crowds of people.

The Model of Factors Affecting Consumer Trust Online (M.O.F.A.C.T.O) that was developed as part of this study, offers an original contribution to the area of e-commerce research. The model is recommended for use by organisations who are contemplating an initial investment in an online presence or a re-branding exercise of a unsuccessful website. The model is to be used as a framework, sitting alongside a traditional marketing strategy, to help make key decisions about a websites design. It is important to note that the model will only help inform such a strategy after fundamental decisions, such as the market audience for a product have been carefully considered. It is anticipated that by using the model with a specific product or service in mind, the model can be contextualised and the relevant factors identified, evaluated in terms of impact and then the design process can be influenced to promote consumer confidence.

### **10.5 Suggestions For Further Research**

As with any research study, one possible area for future research would be to replicate the research, but on a larger scale to determine if the findings from this research were representative of the population.

As previously noted due to the dynamic nature of the e-commerce industry the research would need to be conducted again due to it now being over three years old, and a comparable study would be beneficial to further the research. This would be particularly useful to see if consumer perceptions had changed since the research was published as the 2007 online sales figures show a dramatic increase from those reported in 2003.

The model identified four main factors that would have a high impact on a consumer's trusting beliefs in a website. These were:

1. Age of the consumer
2. Level of education achieved by the consumer
3. The presence of a Shopping Cart program on the website
4. Usability of the website

Although other factors were identified, these were found by the research to be the most pertinent for consideration. The model could be further tested in the future by using the current findings to create a series of artificial web sites, with each one focusing on a particular factor, by the presence or absence of relevant aspects. A sample of participants could then be exposed to randomly selected website versions and asked to discuss how confident they feel in the website and if they would be willing to purchase from them in the future. Although this would require an initial investment creating the different web site versions, it would be a serious test of the model. Although a similar evaluation process was considered as part of this phd study, it had to be rejected due to time limitations.

Another possible area of research would be to compare different countries with the U.K findings, such as a technologically advanced country like Japan. This could determine if the Japanese respondents had the same fears over security, highlighting the difference in results from a more technology embracing culture. Similarly, research could be compared from a less developed country like Africa, to see if the consumer perceptions are the same for a developing country.

A study conducted in a developing country could be highly beneficial to its retail organisations, as it would provide guidelines for them to use when setting up their own online stores. This would be vital for a developing country to ensure that as much as possible business is retained within the countries' own suppliers as one aspect of a growing online community is the globalisation of its marketplace. This is particularly relevant as local laws and cultures have been suggested as a potential barrier to global ecommerce, for example in India, consumers make their purchases with face to face transactions and deal with traditional local traders, often from generation to generation. In contrast, consumers in the United States are more familiar with distance transactions as a large number of consumers regularly purchase from catalogues and mail order companies, therefore making them more open to the prospect of online shopping. One key suggestion for business targeting a global audience therefore, is to firstly look at possible cultural barriers in their specific targeted countries, and consider the effects these will have on the adoption of online shopping.

Finally research could be conducted to determine if government legislation has an impact on consumers' perceptions of e-commerce. Although originally identified as a possible factor for investigating, and included in the first version of the trust model,

this was removed from the research study due to it being determined as not feasible within the scope of the research and the time limitations. It remains a potential area for future research.



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**APPENDIX 1**

**ETHICAL CLEARANCE CHECKLIST**

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Please note this section is in closed  
access as it contains original  
signatures



**APPENDIX 2**

**REVISED RESEARCH QUESTIONNAIRE**

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1. Generally do you enjoy shopping?
2. How many times a week, on average do you go shopping?
3. Have you ever purchased goods through a mail order catalogue?
4. From the list below please select which one you feel is the most important aspect of the high street shopping experience?

Customer service  
Ability to try on items  
Product is available immediately  
Leisure Activity  
Seeing the tangible product  
Other, please specify

5. What do you feel is the worst thing about the high street shopping experience?
6. How do you generally pay for your purchases?
7. How confident are you that your transaction details are secure?
8. Do you have access to the Internet:  
At home    Yes    No  
At Work    Yes    No
9. How many years of online experience do you have?
10. How many hours on average per week would you estimate you spend on the Internet?
11. How did you learn how to use the Internet?
12. Do you feel confident that any information you give online is secure?
13. What activities do you mostly use the Internet for?
14. Have you ever purchased goods online?
15. How regularly do you purchase goods online?
16. What method of payment do you use?

17. Overall how would you rate the level of service received?
18. Which goods are you most likely to purchase online?
19. Have you ever used Paypal to pay for goods purchased online?
20. If yes, is Paypal preferable to using a credit card?
21. How confident are you that your transaction details are secure?
22. Is there anything about the online shopping process you particularly liked?
23. What factors would make you decide to purchase an item online rather than in-store?
24. If your favourite high street shop created a web site would you go online and look at it?
25. Is there any websites you buy from more than others?
26. What aspects of the web site do you find particularly attractive?
27. How high would you rate the difficulty in making a purchase online?
28. From the list of deterrents below, please select which one you feel would be most likely to prevent you from purchasing online?

Lack of Tangible Product

Lack of User Knowledge

Returns Difficulties

Security Concerns

Customer Service

Delivery Issues

Other, Please specify

29. Consider the following statements & mark them 1 – 5 on level of agreement

1 = Strongly Agree, 2 = Agree, 3 = No opinion, 4 = Disagree, 5 = Strongly Disagree

I feel I have the required knowledge to purchase goods online

I feel online transactions are open to misuse

I feel online stores that display assurance seals are trustworthier

I feel confident giving my credit card details online

I need to have the tangible product in front of me to make a purchase

I have used websites to gather product information, but only purchase instore

I have reservations about purchasing goods online mainly due to security issues

I would purchase from a web site that had been personally recommended

I feel that assurance seals have no effect on the trustworthiness of a site

I feel that in-store transactions are safer than online transactions

I believe that websites with shopping cart programs are easier to use

I feel uncomfortable giving my credit card details to online stores

I intend to purchase online in the next twelve months

I am confident I can identify when the transmission of credit card details to the website is secure

30. Occupation:

31. Sex: Male Female

32. Age Group: 20 or under 20s 30s 40s 50s 60s

33. Marital Status:

34. Level of educational qualification achieved?

**Thank you for your time and co-operation.**

**APPENDIX 3**

**SHOPPING SCENARIO TASK SHEET**

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You have decided to buy your Christmas presents online this year, and have been given the following list of items to purchase, with a link to the relevant website where it can be found.

For each website locate the item specified on the list and proceed along the transaction process until you are asked to enter your personal details.

The items are:

[www.Amazon.com](http://www.Amazon.com) – CSI Season 3 DVD

[www.yoox.com/home.asp/](http://www.yoox.com/home.asp/) - Mens Diesel Wallet – Priced £12.99

[www.hyvoltageaudio.com](http://www.hyvoltageaudio.com) – Keeping the Faith – Tape Format

[www.tesco.com/](http://www.tesco.com/) - Groovy Milkshake Maker – Priced £19.99

Proceed along the websites at your leisure - There is no time limit to the task

Happy Shopping!

**APPENDIX 4**

**INTERVIEW TRANSCRIPTS**

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The interview transcripts from the qualitative research are presented as follows:

- A4.1          Participant One Transcript**
- A4.2          Participant Two Transcript**
- A4.3          Participant Three Transcript**
- A4.4          Participant Four Transcript**
- A4.5          Participant Five Transcript**
- A4.6          Participant Six Transcript**
- A4.7          Participant Seven Transcript**

**APPENDIX 4.1**

**PARTICIPANT ONE TRANSCRIPT**

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Q1. Which of the 4 websites would you say you preferred and why?  
Tesco as it was easy to go round and simplest to buy from.

Q2. Which of the 4 websites was your least favourite and why?  
The second CD one, HyVoltage. I couldn't find anything and it wouldn't give me directions so I found it really difficult purely because I have not used Internet shopping for about 5 years.

Q3. Please rate each of the websites on their:

	Yoox	Tesco	Amazon	Hy Voltage
Usability	Good	Very Good	Good	Poor
Trustworthiness	Good	Very Good	Good	Poor
Overall Appeal	Good	Very Good	Good	Average

Q4. Which website would you feel most confident buying from and why?  
Tesco as its simplified as so easy to use.

Q5. Which of the websites would you not feel confident purchasing from and why?  
HyVoltage, would definitely go to another site to buy a cd

Q6. Did you notice which of the websites displayed an assurance seal?  
No, didn't bother looking for it as I have never bothered.

Q7. How easy did you find locating the items on your shopping list?  
It started off difficult; HyVoltage was really hard but was ok.

Q8. Do you think the type of product sold would affect your decision to purchase online?  
I think if the site displays it ok it wouldn't matter as you usually know what you want before you go for it.

Q9. Do you think the shopping cart program makes it easier when browsing online?  
No difference

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?  
Used Amazon before as bought a book off them, but no others. Amazon has good rep.

Q11. Did you recognise which of the websites were secure?

Yes but then it has never really bothered me giving my card details. I would have to had gone further anyway.

Q12. Did you check any of the websites for their privacy policies?

It came up but no.

Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

It is easier to sit there and you can pause it etc. I usually know what I am looking for so not like in shops when you can look round and pick things up as you see them.

Buying in online is more specific so I wouldn't bother browsing.

**APPENDIX 4.2**

**PARTICIPANT TWO TRANSCRIPT**

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Q1. Which of the 4 websites would you say you preferred and why?  
Tesco because it was the easiest one to find

Q2. Which of the 4 websites was your least favourite and why?  
HyVoltage, I found it quite confusing it didn't seem very straight forward

Q3. Please rate each of the websites on their:

	Yoox	Tesco	Amazon	Hy Voltage
Usability	Average	Average	Average	Poor
Trustworthiness	Good	Good	Average	Poor
Overall Appeal	V Good	Good	Average	Poor

Q4. Which website would you feel most confident buying from and why?  
Tesco, because it's a branded name that I know

Q5. Which of the websites would you not feel confident purchasing from and why?  
HyVoltage because I found it too hard to find the item

Q6. Did you notice which of the websites displayed an assurance seal?  
No

Q7. How easy did you find locating the items on your shopping list?  
It was quite easy although I only found two

Q8. Do you think the type of product sold would affect your decision to purchase online?  
I don't think it matters

Q9. Do you think the shopping cart program makes it easier when browsing online?  
Yeah because it is all set out for you

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?  
No

Q11. Did you recognise which of the websites were secure?  
No I would not know what to look for

Q12. Did you check any of the websites for their privacy policies?  
No



Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

I think if you got into shopping on the internet you would find it much easier but I would still prefer to shop on the high street, because I can see what I am buying and what is happening.

**APPENDIX 4.3**

**PARTICIPANT THREE TRANSCRIPT**

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Q1. Which of the 4 websites would you say you preferred and why?

I think Amazon, because I knew it fairly well and use it a lot.

Q2. Which of the 4 websites was your least favourite and why?

HyVoltage Audio, that was just terrible.

Q3. Please rate each of the websites on their

Usability:

Yoox – the problem I had with that is that it was only after a while I realised there was male and female at the top and so it had defaulted to female as was showing purses and so I didn't like that aspect really as it wasn't obvious at first it was defaulted.

Tesco – It was nice and bright actually, not what I expected of Tesco to be honest with you, but I couldn't find the search right at the beginning it was only after I had gone into the extras bit. I also wasn't sure if they would put the milkshake maker in with the food stuff and so I plumped for the extras section. Again not clear, though it wasn't really obvious where to find a product like that.

Amazon – Yeah I like Amazon, its kind of because I have used it so much I know where to go and if am looking for a book I just click on books and don't have to search through everything. It seems reasonable, I use Amazon not only for buying stuff but for researching stuff like trying to find cds and other stuff, and I find it very intuitive to use now as used it so much.

HyVoltage – Yeah that was just not obvious when it opened up and I went somewhere else and clicked site map to see where I was but it just took me back to that opening page which was not what I expected so yeah thought that was pretty bad.

Trustworthiness:

Amazon – I have with Amazon too many times and I am quite happy with that as never had a problem with it, I have even used the Amazon marketplace a lot as well, and yeah I haven't had a problem with it if stuff doesn't turn up they just recredit it and if it does turn up they will take it back.

Yoox – Erm I don't know as I wouldn't buy clothing online anyway but it seems like a reasonable site.

Tesco – Yeah I trust Tesco as a big company like that they can't afford to mess it up but they do occasionally I suppose. I guess you just hope an organisation that size would have it sorted out.

HyVoltage – It just didn't give me any confidence in it at all.

Overall Appeal – See above

Q4. Which website would you feel most confident buying from and why?

Amazon

Do you think that's based on your experience or do you think that out of the four you would have gone for that one anyway?

I would anyway because it's the sort of thing I buy the most of like books and cds and they are the sort of things you don't need to see tangibly, unlike a pair of shoes or something so yeah it's the right kind of product.

Q5. Which of the websites would you not feel confident purchasing from and why?  
HyVoltage, just didn't like it.

Q6. Did you notice which of the websites displayed an assurance seal?  
No, I don't tend to take any notice of those things as I could put one on my website.

Q7. How easy did you find locating the items on your shopping list?  
Apart from that one where I struggled, Tesco should have had a search facility right at the top I think then I would have found that a lot quicker but the other two seemed to be fairly quick especially using the search and I do find that you don't have to bother to type the whole word in just use particular keywords and it should give it to you.

Q8. Do you think the type of product sold would affect your decision to purchase online?  
Oh yeah definitely.

So you tend to look for only certain products and you wouldn't browse or anything?  
No I know what I am looking for.

Q9. Do you think the shopping cart program makes it easier when browsing online?  
Yeah generally because you can see what you have put in there and again with the Amazon one it doesn't all have to be from the same one seller.

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?  
I have used Amazon and Sainsbury's but not the Tesco. I had heard of the Tesco and the Amazon but not of the other two, I think Amazon have got a good reputation as I said I haven't had any problems with it. I have not heard anyone slagging off the Tesco one and I have seen the van racing around a lot so I assume it is doing reasonably well.

Q11. Did you recognise which of the websites were secure?  
No, I mean I know that Amazon is and I guess that Tesco would claim to be but I don't know about the others.

Do you know when you go online what you are looking for to check it is secure?  
Oh it doesn't tend to bother me the fact that its got a, oh you mean in the final transaction stages, well if it is there then it is good but if its not there it wouldn't stop me from buying something.

Q12. Did you check any of the websites for their privacy policies?  
No, again I don't tend to.

Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

Oh I love it, you don't get assistants coming up to you asking can I help you, much greater choice online and I mean we bought a DVD player and we looked around all over the place, you go into currys and they have half a dozen they want to get rid of but no choice but on the web we found the one that we wanted so if your not desperate for it right away, I would rather look round.

## APPENDIX 4.4

### PARTICIPANT FOUR TRANSCRIPT

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“Most of these websites don’t give things the way I think, the way that they organised is not the way I think. Basically I am a trained indexer and I think most of their taxonomies are rubbish”

So you don’t think they are intuitive to use?

No absolutely not, in fact the exact opposite

Q1. Which of the 4 websites would you say you preferred and why?

I think the more logical question is which one did I find easier to use which are the Amazon and the tesco, they were the easiest to use.

Q2. Which of the 4 websites was your least favourite and why?

Well that’s hard to say as I didn’t even use the HyVoltage one as I didn’t even know what I was looking for.

Q3. Please rate each of the websites on their

Usability:

Tesco and Amazon were easier to use than the other two but I still think their taxonomies were rubbish.

Trustworthiness:

Think they are all the same

Overall Appeal – Not Answer

Q4. Which website would you feel most confident buying from and why?

None

Q5. Which of the websites would you not feel confident purchasing from and why?

See above answer

Q6. Did you notice which of the websites displayed an assurance seal?

From past experience I know Tesco and Amazon have something about security displayed on there but I must admit I didn’t notice today as I wasn’t looking for it.

Q7. How easy did you find locating the items on your shopping list?

Errm well I mean Amazon and Tesco was ok I just needed to go through more steps with the tesco one top go through the taxonomies. With Yoox I was a bit put off to begin with by not knowing what that might be under because it seemed the lists you were given were for clothing designers and so I put it in the search that’s how I got to it. That’s usually my first approach to these things because I find the way they are organised is so unintuitive for me that if there is a search option I use that first and then start sorting out what they give me.

Q8. Do you think the type of product sold would affect your decision to purchase online?

I think I would be more likely to buy a book or dvd than an electrical item as I would want to go down to the store and look at it, feel how much it weighs etc. I know I wouldn't buy things like that online.

Q9. Do you think the shopping cart program makes it easier when browsing online? It does make any difference to me.

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?

I have often browsed through amazon just to see what is available, not necessarily to buy it but just to get more information, particularly about books. I look for availability and then go and see what it is like in store. The other thing to remember is that Loughborough is in a really good place to be able to get to these really big department stores and we have fosse park etc and we have Leics and Nottingham so really if you are someone like me who likes to see and touch things before buying them then I have the opportunity to do that where as If I lived in an end of the woods type place then my attitude towards online shopping would be different.

Q11. Did you recognise which of the websites were secure?  
No, not consciously but then I wasn't looking for it.

Q12. Did you check any of the websites for their privacy policies?  
No, again I don't tend to.

Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

I think I just generally prefer the high street as I say I would use the web to find out what's available where and then I can go in and buy it. Its like I do my window shopping online and then go into the store so I know how much it costs etc.

I very much enjoy looking through the catalogues that come through the door but as far as clothes are concerned I need to try things on, sending things back is a real pain so I tend to use stores like marks and spencer as they don't give you any hassles if you need to return things.

APPENDIX 4.5

PARTICIPANT FIVE TRANSCRIPT

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Q1. Which of the 4 websites would you say you preferred and why?

Amazon, definitely because I use it every time anyway even if the cds are more expensive.

Q2. Which of the 4 websites was your least favourite and why?

HyVoltage one, because the search bar was completely hidden out the way, you just couldn't find it, and it just looked shockingly bad. It just wasn't good and not user friendly at all.

Q3. Please rate each of the websites on their:

	Yoox	Tesco	Amazon	Hy Voltage
Usability	Good	Good	Very Good	Poor
Trustworthiness	Good	V.Good	V.Good	Poor
Overall Appeal	Good	Good	V.Good	Poor

Q4. Which website would you feel most confident buying from and why?

Amazon & Tesco

Q5. Which of the websites would you not feel confident purchasing from and why?

HyVoltage, just from the way it looked. It didn't look very professional, looked like anyone could have made it.

Q6. Did you notice which of the websites displayed an assurance seal?

I didn't. Amazon has got one at the bottom of the homepage

Q7. How easy did you find locating the items on your shopping list?

Amazon & Tesco ones were fairly easy but the Yoox and HyVoltage ones were fairly difficult, the interface was not as easy to use.

Q8. Do you think the type of product sold would affect your decision to purchase online?

Not necessarily because if it's a trusted website and there is a product there you have seen in a shop and its cheaper, I wouldn't necessarily go to another website though if it was on Amazon I would buy it because I trust it.

Q9. Do you think the shopping cart program makes it easier when browsing online?

Yeah it does because at the end of the shopping trip you can see what you have bought and you can remove or add as you like.

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?

Only Amazon and Tesco, good worldwide reputation

Q11. Did you recognise which of the websites were secure?

*I didn't to be honest now.*

Q12. Did you check any of the websites for their privacy policies?

Couldn't say, I never look I just do it.

Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

It depends what am after, if its just a few dvds or cds, things like that, then I will get it Off the internet but as with the questionnaire, not being able to look or feel would stop me getting things like food, as you could be getting all the out of date stuff.



**APPENDIX 4.6**

**PARTICIPANT SIX TRANSCRIPT**

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Q1. Which of the 4 websites would you say you preferred and why?

Probably Tesco's because it was really easy to search and it came up instantaneously and it was quick and easy to click on things

Q2. Which of the 4 websites was your least favourite and why?

Definitely the Yoox one because it just wasn't obvious where to click and where to look and when you searched for stuff it just didn't come up.

Q3. Please rate each of the websites on their:

	Yoox	Tesco	Amazon	Hy Voltage
Usability	Average	Good	Good	Good
Trustworthiness	V. Good	V.Good	Good	Unfamiliar so average
Overall Appeal	V.Good	V.Good	V.Good	Average

Q4. Which website would you feel most confident buying from and why?

Tesco.

Q5. Which of the websites would you not feel confident purchasing from and why?

The HyVoltage one because it didn't seem as professional but then it had a checkout option which seemed to be secure and it had a secure connection so I would probably be quite happy, handing over my credit card details doesn't bother me at all. But you thought there was something about the HyVoltage one that seemed less professional?

Yeah, it just wasn't as professional looking as the others.

Q6. Did you notice which of the websites displayed an assurance seal?

I only remember noticing it on the Amazon site because it was underneath where I clicked, but it is not something I look for, no. The only thing I do look for is the little padlock in the bottom corner for a secure connection.

Q7. How easy did you find locating the items on your shopping list?

It Varied from Very easily to absolutely horrendously hard; it was alright on most of them it was just the Yoox one that gave me problems.

Q8. Do you think the type of product sold would affect your decision to purchase online?

Yes to a point in that I tend to buy things that are not that expensive on the Internet because although I am quite happy and fairly comfortable with it, I tend to freak out a bit that they might get lost in the post as I have had a couple of items go walkies so it tends to be little things like cds, dvds and books even hair straighteners but nothing majorly big like a dvd player.

Q9. Do you think the shopping cart program makes it easier when browsing online?  
Yes much and its really nice to be able to review what you have got and take it out or get two of the same thing or remove something.

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?

Amazon and Tesco I have heard of but the other two I hadn't, it was mainly positive things I have heard. I have used Amazon before, the actual Amazon is absolutely fine and the marketplace bit is alright but things take absolutely ages to get delivered and that really annoys me. I bought some of my coursework books from there last year and they didn't arrive till the end of the year, so it wasn't overly useful but that is the marketplace bit and not actual Amazon.

Q11. Did you recognise which of the websites were secure?

Yeah just when that I am entering my details the website has to have a little padlock in the bottom corner for a secure connection and my computer usually pops up saying you are now entering a secure connection, is this ok?

What if the pop up came up but said it wasn't a secure connection?

I don't think I would go ahead, no.

Q12. Did you check any of the websites for their privacy policies?

No I didn't, no oh dear I ought to do that really is that really bad? My parents do like my dad will spend hours ordering his stuff on the internet because even for just one thing he will go through them and he reads like every term and conditions page where I will just click and go.

Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

It's convenient but its no where near as much fun! So it's really good if I get the urge to buy a cd at like silly o clock in the morning I can go online and order it and it will be delivered in two days but it doesn't beat going into a shop, especially with clothes, and trying things on. Clothes I don't tend to do online as I am a really funny size and I need to try things on but for electrical things or books, or I have a thing for model horses and I buy them online but if I had a choice I would still go high street shopping, just for the experience, am I a freak?

**APPENDIX 4.7**

**PARTICIPANT SEVEN TRANSCRIPT**

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Q1. Which of the 4 websites would you say you preferred and why?

Tesco, - nice to look at, all the departments are listed on left and first thing that you come to so you can eliminate all your choices straight away without looking and go straight to that department.

Q2. Which of the 4 websites was your least favourite and why?

Looking for the cd, the black one. Hy Voltage Audio – just did not like the look of it as soon as I got onto it, it looked like nothing I have been on before and there wasn't many options of how to search, there wasn't a search box as far as I can remember that you could just put the title in that you wanted so I ended up looking via products and it just wasn't very helpful.

So it wasn't very intuitive to use?

No not at all

So you mentioned about the look of it, what about it?

Very dark, black background and white writing, just a lot of letters really too much going on. Not enough, yeah wasn't a search box, it wasn't broken down into categories. I think it explained what you could do on the beginning of it but if you don't really know what your buying I think you have got to have visited it before or something similar to know exactly how to access what you want. Its not the easiest of sites to access when you have not been on it before, where as if I had not been on Tesco its not that difficult to find what you wanted.

Anything else that strikes you when you compare the two?

No they both need you to put your address in at the check out so that would have been fine.

Q3. Please rate each of the websites on:

Usability

Amazon – usability was good, it gives you the dispatch time for the item and it gives you a rundown of what your buying and how much your paying and the standard delivery, was really clear

Tesco – would be the same

Yoox -was quite easy to use but not stuck out in my head like Tesco

HYvoltage – Didn't like that one,

Trustworthiness

Amazon – trusted completely as its such a big, well known name and same for tesco, and would have been fine putting my details into Yoox one but probably wouldn't have bothered with the cd one to be honest.

Overall Appeal

Overall Amazon and Tesco very good, Yoox was ok probably if I couldn't find what I wanted I wouldn't bother with the other one.

Q4. Which website would you feel most confident buying from and why?

Amazon, because I have used it before .

Q5. Which of the websites would you not feel confident purchasing from and why?

The black, cd one

Q6. Did you notice which of the websites displayed an assurance seal?

No what is one, no but there was a guarantee on the Tesco one

Q7. How easy did you find locating the items on your shopping list?

Yeah was easy just not the cd one

Q8. Do you think the type of product sold would affect your decision to purchase online?

Well I would look online for most things but wouldn't spend hours looking for a cd as you could just go down to a cd shop and buy it as there is so many but with the Amazon thing I would be quite willing to search and look if I couldn't find it as they ship from America and get stuff that I couldn't get from the shop. I wouldn't buy toiletries or anything like that would prefer to buy them myself and I wouldn't buy food shopping either I don't like the idea of someone else packing my food and giving it to me no i would never do that.

Q9. Do you think the shopping cart program makes it easier when browsing online?

No its definitely easier, it makes it more sequenced, you know what your doing, you know what your putting in and the details you are giving them and it does make you feel more secure.

Q10. Had you heard of any of the websites before using them today and if so what type of reputation do they have? Had you shopped online from any of the websites before?

I know the tesco one but had not heard of the other two, I think the tesco website is good from what I have heard and Amazon is spot on yeah.

With Amazon that you have used before did you have to set up like an account that you go back in and log in?

One of them, think it was the black website you could enter as a non account user which I don't think is very good, I would rather they have my details because then they have they have got a history of you otherwise you could just be anybody.

Q11. Did you recognise which of the websites were secure?

Tesco oh and the little box that came up was two of them, only two.

Q12. Did you check any of the websites for their privacy policies?

That's what like the conditions, I know that they are in there but I never usually check. If I was on a new one I would do yeah just have a scroll down but when have used them before.

Q13. Overall how would you rate the shopping experience using the web, compared to the traditional high street experience?

It is a lot easier and saves a lot of bother and I have done it before ordering books and things and you don't immediately get feedback to say that something is not in stock and then you have to wait for an email and reorder it which takes longer and longer and so is six of one and half a dozen of another I think.

Do you actually like when you go out shopping being able to have the products in front of you and taking them home?

Yeah I would rather go window shopping that day of the week then sit in and shop online. I like to see, feel, touch and see if I can get a bargain as you don't really get them on a website.

