

Factors that affect students' decision making on buying computers: online or in retail shops

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Abstract

With new wireless technology constantly being developed, online shopping is increasingly common nowadays. People can search for and buy products online much more conveniently and efficiently than shopping in retail stores. In fact, the number of people who choose online shopping is continuously increasing.

This dissertation is concerned with the factors that affect students' decision making as to whether to buy products online or in retail shops. This research uses mixed methodology, which includes quantitative and qualitative methods, and the information has been collected by survey and interview. A total of 92 students responded to the survey and 9 students were interviewed.

The information gathered in the research is analysed in comparison with relevant literature. Some key factors were defined by reviewing relevant literature: including price, convenience, efficiency, safety, product range and service. These factors provide a structure to research in this dissertation and enable some new factors to be found.

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Declaration

I hereby certify that this material, which I submit for assessment on the programme of study leading to the award of Master of Computing, is entirely my own work and referenced according to APA guidelines.

Peng Li

Table of Contents

List of Tables	vii
List of Figures	x
1. Introduction.....	1
1.1 Background.....	1
1.2 Purpose of dissertation	3
1.3 Organisation of dissertation.....	4
2. Literature Review.....	5
2.1 Development of online shopping.....	7
2.2 Parameters affecting people shopping online	10
2.2.1 Price	10
2.2.2 Convenience.....	12
2.2.3 Efficiency	13
2.2.4 Product range	14
2.2.5 Product category	15
2.2.6 Age	15
2.2.7 Service.....	16
2.2.8 Safety	17
2.2.9 Trust	18
2.2.10 Knowledge base	19
2.3 Summary.....	19
3. Research Methodology.....	21
3.1 Data collection.....	22
3.1.1 Literature review.....	22
3.1.2 Survey for quantitative data.....	22

3.1.3 Interview for qualitative data	24
3.2 Data analysis.....	25
3.2.1 Survey results.....	25
3.2.2 Interview results.....	27
3.3 Summary.....	27
4. Data Results and Analysis.....	29
4.1 Introduction	29
4.2 Survey results	29
4.2.1 Results for buying general products online.....	30
4.2.2 Results for buying computers	32
4.3 Interview results	37
4.3.1: Interview results for buying online	38
4.3.2: Interview results for buying in retail shops	39
4.3.3: Interview results for buying in both ways	41
4.4 Data analysis.....	42
4.4.1 Trend of online shopping	42
4.4.2 Effect of product category.....	44
4.4.3 Effect of cost, safety, service, efficiency and convenience	45
4.4.4 Effect of knowledge base.....	49
4.4.5 Effect of gender	50
4.4.6 Effect of qualification level	56
4.5 Summary.....	61
5. Discussion	62
6. Limitations	66
7. Conclusions	67
Appendices.....	69
Appendix A: Questionnaire form	69

Appendix B: Interview questions	74
Appendix C: Information sheet.....	76
Appendix D: Consent form	78
References	79

List of Tables

Table 2.1: Lists of references and their associated sections.....	5
Table 4.2.1: Number of male and female respondents.....	30
Table 4.2.2: Percentage and number of respondents who have bought products online before or not.....	30
Table 4.2.3: The year when respondents start shop online.....	31
Table 4.2.4: Respondents' feedback of advantages and disadvantages of online vs. retail shopping by percentage.....	31
Table 4.2.5: Popularity of various products which respondents bought online.....	32
Table 4.2.6: The percentage and count of how respondents acquired their latest computers.....	32
Table 4.2.7: The percentage and count of when respondents acquired their latest computers.....	33
Table 4.2.8: Percentage and number of respondents who bought brand new and second hand computers	33
Table 4.2.9: Percentage and count of respondents who acquired computers with different values.....	34
Table 4.2.10: Percentage of distribution of shopping's price, safety, quality of service, efficiency and product range in respondents' shopping experience for computers.....	35
Table 4.2.11: Importance of the reasons why buying computers.....	35
Table 4.2.12: How respondents choose their computers.....	36
Table 4.2.13: Proficiency of respondents in computer hardware technology.....	36
Table 4.2.14: Percentage of respondents' feedback after purchasing computers.....	37

Table 4.4.1: Percentages of distribution of shopping’s price, safety and quality of service in respondents’ shopping experience for general products vs. computer.....	47
Table 4.4.2: Percentage of respondents’ feedback after purchasing.....	48
Table 4.4.3: Distribution of male and female respondents in different qualification levels.....	50
Table 4.4.4: The percentage of male and female respondents who have bought products online before and how they acquired their latest computers.....	51
Table 4.4.5: The percentage of where the male and female respondents bought their current computers and the type of computers.....	52
Table 4.4.6: Importance of the reasons why male and female respondents bought computers.....	52
Table 4.4.7: Distribution of male and female respondents’ opinions of shopping’s price, safety and quality of service for general products.....	53
Table 4.4.8: Popularity of various products which male and female respondents bought online.....	54
Table 4.4.9: Percentage of male and female respondents’ computer hardware technology level and how they chose computer models.....	54
Table 4.4.10: Distribution of male and female respondents’ opinions of shopping’s price, safety and quality of service, efficiency and product range for computers.....	55
Table 4.4.11: Distribution of postgraduate and undergraduate respondents by gender.....	56
Table 4.4.12: The percentage of postgraduate and undergraduate respondents who have bought products online before and how they acquired their latest computers.....	56
Table 4.4.13: The percentage of where postgraduate and undergraduate respondents bought their current computers and the type of computers.....	57

Table 4.4.14: Importance of the reasons why postgraduate and undergraduate respondents bought computers.....	57
Table 4.4.15: Distribution of postgraduate and undergraduate respondents' opinions of shopping's price, safety and quality of service for general product.....	58
Table 4.4.16: Popularity of various products which postgraduate and undergraduate respondents bought online.....	58
Table 4.4.17: Percentage of postgraduate and undergraduate respondents' computer hardware technology level and how they chose computer models.....	59
Table 4.4.18: Distribution of postgraduate and undergraduate respondents' opinions of shopping's price, safety and quality of service, efficiency and product range for computers.....	60

List of Figures

Figure 4.4.1: Percentage of respondents commencing online buying.....	43
Figure 4.4.2: Annual statistics when respondents bought their latest computers online vs. in retail shops.....	43
Figure 4.4.3: Comparison of the average rating of products which are bought online by students from Unitec vs. Mid-western American University	44
Figure 4.4.4: Comparison of the percentage of people who think shopping online is cheaper in U.S. (Horrigan, 2008) and Unitec	45
Figure 4.4.5: Comparison of the percentage of people who are concerned about the safety of online shopping in U.S. (Horrigan, 2008) and Unitec	46
Figure 4.4.6: Comparison of the percentage of people who think shopping online is efficient in U.S. (Horrigan, 2008) and Unitec.....	46
Figure 4.4.7: Computer hardware technology proficiency vs. help when purchasing	50
Figure 4.4.8: Distribution of males and females who chose online shopping in the U.S.....	51

1. Introduction

1.1 Background

People are used to going to retail stores to find and purchase products. In usual practice, a customer goes to a market or shop and then this customer chooses products carefully and slowly by physically and visually surveying the items. After the customer finds out the products that he wants to buy he takes these products to the checkout to make payment. The customer might have to travel a long distance and wait in a queue. The above procedure is the traditional shopping method, but it is not the only shopping method available in this day and age.

The rapid growth of computer use and the internet, both in business and in the home, offers another way that purchases can be made: consumers can make purchases online. Customers can search on the internet for products according to their wanted specifications and then they can complete the purchase online; this enables the customer to find products by search engine quickly. Also, there exist virtual shopping carts that can record the choices that a customer makes. Then, the customer can click the “pay” button to initiate a credit card purchase of the selected products; the products will be posted to the customer via the address that the customer has provided. There are already a number of websites created for selling products in New Zealand, catering to both brand new and second hand products. These websites include ‘Shop New Zealand’, ‘ShopHere’, ‘OCzone’ and ‘Trademe’ among others. In this environment of customer choice, students have the ability to search for a range of products on the internet often with better choice and expedience compared with traditional retail shopping.

Many previous papers have analysed online shopping behaviour: for example, Hunt (2007) discussed the various methods of online shopping; Wolfenbarger (2001) studied the situations involved in online shopping; and Kimberly (2007) talked about the difference between online shopping and retail shopping. These papers discussed the online shopping behaviour of many kinds of consumers in connection with a wide product range.

This dissertation focuses more specifically on how computers are purchased by students. The computer is chosen as the focus of this study as it has become a necessary part of our modern culture. Computer hardware and software are rapidly developing and as technology develops, computers become progressively cheaper while performance increases (Weiser, 1999). Many consumers buy new computers or update their existing computers every two years because old computers cannot support new software (Shum, Hardnett, & Kears, 2008).

Students need computers perhaps more than any other group: they use computers in studying, chatting, gaming and in most areas of their lives. In their academic life they need computers to process their work; at home they use computers for communication, entertainment and recreation; computers also play a very important role in the student's education. Computers are nowadays used widely in schools: even in primary school (Bovee, Voogt, & Meelissen, 2007), yet they are most prominent in higher education, where computers can provide an ever wider range of help to students. By using computers, tertiary students can increase their efficiency and study in more convenient ways: such as in multimedia applications, in completing online exercises and so on (Friesen, 2003). Students can also receive instruction from tutorial sessions that are computer-based: a practice that is quite different from traditional classroom-based education (Stanley, Xuan, Fife, & Colton, 2007).

Students represent a large consumer group in the marketplace. According to Gardyn (2002), American college students purchase around 200 billion US dollars worth of products annually. Because of the buying power of this large market it is important to study the shopping habits of students. In China, the total number of internet users reaches 13.2 billion and more than 30 billion people shop online. From this group of people about 81.3% are less than 35 years old and logically a significant percentage of these younger users are students (Huang, 2007).

According to Kimberly (2007), many internet users enjoy their online experience and spend some time on the internet every day. They can take part in a range of activities online: including chatting online; reading news online; studying online and shopping online.

In the research by Golden (2007), it is observed that students have much leisure time after class that they can use to surf the internet. They chat with each other, play games, read news, shop online and so on. It is fun when students use internet and because of this students use the internet often. With using internet more, students' lives depend more on the internet and it encourages more online shopping.

According to Xia and Munroe (2004), some students live with parents and most of them do not have a lot of expendable income and therefore the price of products is important to them. The main costs for students are rent, clothing and food. College students also need to purchase fashionable clothes, games, computers, books, CDs, DVDs and so on. When they shop online they can find many things cheaper than in traditional stores. From online shops college students can find that fashionable items especially are less expensive than their retail counterparts (Goode, 2009).

According to Wolfinbarger (2001), when students surf the internet, there are a lot of advertisements on the websites that they visit. Some advertisements are attractive and students may view them and purchase online. Furthermore, e-mail is also an efficient way to post advertisements as junk mail can be broadcast quickly and widely.

For the above reasons, computers have been chosen in this study as the sample product with Unitec computing students as the target group. The sample size was limited to Unitec computing students as this is a 60 credits dissertation that is normally completed in one semester. Because of time and budget limitations the sample size is limited to 200 Unitec computing students (92 responded).

Students need computers in their lives; most students have their own computers and they also have experience in buying computers, whether online or in retail shops. Most students buy computers for themselves and have practical knowledge of which issues should be considered in such a purchase.

1.2 Purpose of dissertation

To the author's knowledge, there is no previous research on the manner in which students purchase computers. Therefore, this research aims to study students'

shopping habits and compares the findings as to these habits with comparative findings of previous studies. The computer is used as the sample product for research.

The following questions will be answered in this dissertation:

1. What are the factors that influence decisions on whether to purchase computers online or at a physical store?
 - a) Will variations of product influence relative variations in purchase decisions?
 - b) What opinions do students express when comparing online purchasing with retail purchasing?
 - c) What are the pros and cons of purchasing online and of purchasing in a retail store?
 - d) What parameters affect students' choices as to how they buy computers?
 - e) Which method will students predominantly choose to buy computer products in the future and why?
2. Are there any aspects of the results of this study that can be involved in future research?
3. How do the findings of this report compare with the findings of previous work?

1.3 Organisation of dissertation

The organisation of this dissertation is as follows: section 2 is a literature review, which analyses previous research about shopping online and in retail stores; section 3 describes the methodology of this research; section 4 discusses the collected data; in section 5 the collected data are analysed and compared with previous literature; section 6 covers the limitations of this research; and section 7 provides a conclusion.

2. Literature Review

This literature review section refers to a range of papers that are relevant to the current situation of online shopping. The previous research papers have been chosen as they identify the factors that affect students' decisions on shopping online or in retail shops. Most of the selected literature is from the period 2003 to 2009. However, there are still some papers included in the literature review which were published before 2002 and due to the focus of this research topic on computers specifically the range of directly relevant research papers from recent years is limited.

In this section some previous literature regarding the development of online shopping is discussed. After that, the discussed papers are analysed for their insights into the factors that affect people's decisions on shopping online. The reasons why people choose to shop online are mentioned here as they are presented in previous literature.

Table 2.1: Lists of references and their associated sections

2.1 Development of online shopping
Arar (2009)
Bedernjak (2006)
Goolsbee (2000)
Horrigan (2008)
Kimberly (2007)
Lee, Joshi & McIvor (2007)
Lee & Lin (2005)
Morganosky & Cude (2004)
Wang (2006)
Zhou, Dai & Zhang (2007)

2.2 Parameters affecting people shopping online

2.2.1 Price

Goolsbee (2000)
Hunt (2007)
Park (2003)
Seo & Lee (2006)

2.2.2 Convenience

Girard, Silverblatt & Korgaonkar (2002)
Heijden (2003)
Hong, Thong & Tam (2006)
Pennington, Wilcox & Grover (2004)
Shih (2004)
Siddiqui, O'Malley, McColl & Birtwistle (2003)

2.2.3 Efficiency

Horrigan (2008)
Ward (2001)
Watchravesringkan & Shim (2003)

2.2.4 Product range

Buie (2001)
Levin, Levin & Heath (2003)
Shergill & Chen (2005)

2.2.5 Product category

Chiang, Ruby & Dholakia (2003)
Jones (2003)

2.2.6 Age

Horrigan (2008)
Xu & Paulins (2005)

2.2.7 Service

Lee, Joshi, & McIvor (2007)
Li & Zhang (2002)
Schlosser, White & Lloyd (2006)

2.2.8 Safety

Arar (2008)

<p>Gupta, Su & Walter (2004)</p> <p>Kwon & Lee (2003)</p> <p>Michael, Paul & Surgi (2005)</p> <p>Monsuwe, Dellaert & Ruyter (2004)</p> <p>Schoenbachler & Gordon (2002)</p>
<p>2.2.9 Trust</p> <p style="text-align: center;"> Burke (2002) Horrigan (2008) Lynch, Kent & Srinivasan (2001) Yoo, Lee & Hoffmann (2008) </p>
<p>2.2.10 Knowledge base</p> <p style="text-align: center;"> Budzikowska et al. (2001) Trifts (2000) </p>

2.1 Development of online shopping

In the research by Zhou, Dai and Zhang (2007), it is stated that “shopping online has already been popular for some time. Since the late 1990s, online shopping has taken off as an increasing number of consumers purchase increasingly diversified products on the Internet”.

In 1998 about 90,000 customers made purchases online in the U.S. and in 2002 this number had grown to 7 billion (Morganosky & Cude, 2004). Morganosky and Cude argued that as more people came to own computers, more people gained the ability to surf the internet and therefore that more people were enabled to start online shopping. In the early 2000s, the number of people that owned computers was rapidly increasing.

According to the study by Wang (2006), as the internet continues to develop it brings a great deal of opportunities for businesses. Information has come to be a kind of investment for businesses and consequently the practice of E-commerce is constantly gaining in popularity. Since the internet was invented, online shopping has had around 15 years to develop. Wang stated that online shopping was known first in the 1990s; at that time, online shopping was not as mature and formalised as it is today. People would at this time post information related to the products that they

aim to sell and provide their own contact details on a BBS (Bulletin Board System) or forum. The sellers would then wait for buyers to see their posted product information and to take the initiative of contacting the buyer. This shopping method, reliant on customer action, has been changed significantly until today, but it was the early model for online shopping as it exists today.

Bedernjak (2006) points out that when online shopping first developed there were few specified websites for online shopping and over time more competition came into this market. Nowadays online shopping websites are using various tools and methods to attract customers. The online shopping websites offer promotions and discounts for customers and they concentrate on quality controls according to the feedback solicited from buyers and sellers. Most online shopping websites present a feedback file on the seller: sellers that receive a higher proportion of good feedback can have more credibility and trust from both website operators and buyers. Buyers can check the prior feedback posted about the sellers; the buyer can also give feedback about the seller after purchasing from them. Such consumer websites are designed to attract customers and to facilitate honest and agreeable trade. The websites are designed for convenience and efficiency, with catalogues of available products that are clear and often interactive so that buyers can find what they want more quickly and conveniently than in traditional retail shops.

Lee, Joshi and Mclvor (2007) found that many online shopping websites have good design and particular detailed descriptions of the products on offer. They studied the design of a range of websites and found that the websites for online shopping now have key differences from similar websites previously. Nowadays, product categories are more detailed and the search engines embedded in consumer sites are also more convenient. The products that are sold online are most often accompanied with photos and descriptions and customers who intend to buy an offered product can ask questions of the seller. Furthermore, Lee, Joshi and Mclvor noted that most online shopping websites had third party authority policies to confirm the safety and security of online trading. Third party authority policy means that there is an independent organisation commissioned to confirm the quality of listed products. If the buyers are satisfied with the quality of the product only then will their payment be processed: otherwise the payment should be refunded and the product returned.

According to a report by Goolsbee (2000), in 1995 more than 80% of customers bought their computers in retail stores while in 2000, 29.6% of customers chose to buy computers online. Goolsbee also pointed out that in the computer industry more people were becoming able to buy computers online because computer companies were continuing to develop their online services. Computer manufacturer websites included the facility of online shopping for their own products. Sometimes the computer companies offered promotions and discounts for online shopping only and their buyers could customise the computer model in ways that they could not do in retail shops.

Arar (2009) observed that online shopping brings new opportunities for buying products. People can buy a wide range of products while sitting in front of a computer. Online shoppers can simply login to an online shopping website and find the products that they want to buy without the requirement to travel from store to store in their search.

Lee and Lin (2005) argued that online shopping plays an important role as an electronic service in the current information age. According to Lee and Lin, the Internet has already established itself as an important part of many people's lives. Most families own at least one computer and they spend a great deal of time using computers every day. They do lots of things by using computers: such as watching movies, reading news, making bill payments, gaming, chatting and shopping. Lee and Lin state that the internet is a popular platform for shopping and that around 80% of internet users have experienced online shopping before.

Kimberly (2007) observes that residents in more than half of U.S. households regularly shop on the Web. Kimberly adds that "consumers can buy everything from food to flowers to furniture over the Web, which can save time (just click for purchasing), money (coupons are often easier to find online, plus staying home means saving on gas), and sanity (there are no lines in your den). The reasons to continue visiting bricks-and-mortar shops are dwindling". According to the results of research by Kimberly it is clear to see that online shopping has already affected the traditional shopping style, although it is yet to reach the height of its potential popularity.

Horrigan (2008) expressed the view that online shopping would have a good future and stated that the number of people in America who buy products online has roughly doubled since 2000 and now two-thirds of the consumer population of America has made purchases online. This number should keep increasing. Horrigan also predicted that more people will start online shopping because in his research, he found that 88% of Americans have searched products online. Compared with the 66% of Americans who have bought products online, there are at least 22% of the total population that have searched for products and are thus potential future online shoppers.

2.2 Parameters affecting people shopping online

The parameters that affect online shopping habits were defined through analysis of the literature. The defined parameters are explained in this section with an analysis as to why they affect people's habits of shopping either online or in retail shops.

Some parameters can cause people to choose online shopping and these include: price (section 2.2.1), convenience (section 2.2.2), efficiency (section 2.2.3), product range (section 2.2.4) and product category (section 2.2.5). However, some factors, such as, service (section 2.2.7), safety (section 2.2.8) and trust (section 2.2.9), are barriers for online shopping. Also, some neutral factors are discussed: such as age (section 2.2.6) and knowledge base (section 2.2.10).

2.2.1 Price

Hunt (2007) pointed out that online price is an important factor for choosing online shopping. Hunt observed that online prices can often be cheaper than retail prices partly because a store that deals exclusively online does not need to rent retail store space and also labour costs can be reduced because the sellers do not need to hire many staff members to serve customers.

In their 2006 article, Seo and Lee (2006) agreed that the main reason why people choose to buy online is the price of the products. Most consumers hold the belief that online prices are lower than retail prices. In the research by Seo and Lee, online prices from a range of websites were compared with the retail price and some online prices are always lower than retail prices of the same or equivalent products and they found that it is common for the online price to be slightly lower than the retail price for the same product. They also pointed out that it is common that online price is slightly lower than retail price for one product. However, the researchers noted that if the online price is much lower than the retail price then the buyer should consider what this may suggest about the quality and authenticity of the product.

Park (2003) also contended that price is the most important factor that causes customers to choose online shopping. Sometimes, when people are online, they buy products only because of the price and not because they like or need the product itself. According to Park, more than 70% of customers choose online shopping because of the price. Online buyers purchase both brand new and second hand products and there are some websites that are devoted primarily to selling second hand products. The price of second hand products is generally much cheaper than brand new products and a lot of online buyers are searching second hand products with price in mind as the key reason for shopping online. One online buyer quoted by Park said: "it is common to find brand new products with second hand price". According to Park's analysis, some new products are resold as they are unwanted gifts or non-refundable products and in these cases the asking price is commonly much lower than for brand new products.

Goolsbee (2000) also strongly agreed that online price is normally lower than retail price. Goolsbee stated that price is an important factor affecting how people buy computers. Goolsbee collected data related to computer prices in both online and offline stores in a wide selection of American cities. The collected data in his research showed that in most cities in America, prices offered by online shops were in all cases lower than those offered by retail shops.

2.2.2 Convenience

According to Pennington, Wilcox and Grover (2004), customers can find the products they want much more easily by using online shopping websites to locate products in a fast and convenient way via specified search engines. Some online websites use external search engines such as: Baidu, Yahoo, Google and Qihoo, but most online shopping websites have their own search engine and filter tools. The customers can find products by search engine conveniently (Siddiqui et al., 2003).

Girard, Silverblatt and Korgaonkar (2002) found that more than half of the people who choose online shopping state that online shopping are much more convenient than traditional styles of shopping. They also noted that now there are a number of new kinds of websites being built. These websites do not sell products directly, but simply provide the information of products and sellers. Customers can search through products on these websites and then the search results can be linked to the relevant online stores' websites. Normally, these kinds of websites have strong search capabilities and effective design for customers so that they can easily find the products that they want.

Heijden (2003) also agreed that online shopping makes shopping more convenient. Online shopping brings a sense of freedom to customers; before online shopping was introduced, customers normally travelled physically to retail shops to find the products that they wanted to buy during the opening hours of the retail shop, but nowadays the customer only needs a computer and an internet connection to shop from home. The customer can buy products anytime, day or night, and the process of making purchases is much more convenient than traditional, in-store shopping styles.

Hong, Thong and Tam (2006) stated that most customers tend towards online shopping because they can find accurate and comprehensive information on the products that they want to buy online. The customer can also find brief descriptions and summary information online if they want to make only a cursory search. Online shopping websites generally provide comprehensive details where possible: such as how many products are available for sale, images of the products, their functionality, even the instruction and assembly manuals of many products can be downloaded

and some websites provide video clips for the products as tutorials or demonstrations. Customers can view this information without going to retail shops in person.

In the research by Shih (2004), convenience was highlighted as a very important factor that encourages buyers to choose online shopping. There are often a lot of links and advertisements on websites. If internet users are interested in a product after reading its advertisement, they can click a link or a picture in the advertisement to view and buy the product online.

2.2.3 Efficiency

In the 2008 report by Horrigan (2008), it is stated “68% of internet users agree that online shopping saves their time”. Horrigan pointed out that the search engine does not only bring convenience but also efficiency for online buyers. Internet users can use search engines that are specific to the products that they want; online shoppers can use a basic description of the desired products to find out further information on these products. Most search engines are designed for ease of use and understanding. On most search engines users can also opt for advanced search options, which allow the input of more detailed information and search criteria. By applying the online search engine and filter tools customers do not need to physically travel to retail shops in order to find the products they want. Online buyers can use the search engine to find products much more quickly and efficiently, saving time and effort in doing so.

According to Ward (2001), “many online shoppers prefer to undertake efficient linear searches on the Internet using the fewest number of clicks to get to the information of products that they want”. Ward also agreed that the search engine makes online shopping efficient. By using a search engine, customers can find both the products that they want and some related products. Related products can be listed below the products that were searched for by the internet user currently or previously so that the customer does not spend extra time looking for related products: such as accessories for laptops and mobile phones.

Watchravesringkan and Shim (2003) contended that online shopping can save people time because the shopping process can be completed entirely while sitting in front of a computer. The customer does not need to go to a retail shop and spend a lot of time searching for the products that they want, nor are they required to waste time standing in a queue to pay for their chosen items.

2.2.4 Product range

According to research by Levin, Levin and Heath (2003), the large selection of online products is another important factor. Some international online stores, such as www.amazon.com and www.ebay.com are well known. Some products are localised and can only be sold in stores in a specified region, and yet some people need or want products that are not particular to their location or products that have been released elsewhere but have not yet been released in retail shops at the customer's location. Another reason is the different release dates for one product. Two famous websites are presented in Levin, Levin and Heath's study as examples of online shopping options that remedy this traditional problem: www.expansys.com and www.clove.co.uk. The first website, www.expansys.com, is an international online shopping website for the sale of electronic products and www.clove.co.uk is a British online shopping website with a similar product range. On these two websites customers can buy a wide range of electronics products that they most likely cannot find in their local region. The buyers pay by credit card and add an extra surcharge if they are making the purchase from a country outside the U.K. To summarise, in these international online shops sellers can list products from their country and these products can be shipped to buyers all over the world.

Buie (2001) noted that "there is a much wider range of products online now than there has been in the past; people can buy a lot of products from online stores which they cannot find in a retail store; it is also easier in most cases to buy products from overseas via the internet than through a retail outlet".

Shergill and Chen (2005) argued that uniqueness and broad selection are also important factors because some unique products can be found online that are not as easy to source otherwise. Unique products, such as collector's items or products in

limited edition are normally limited by area or by the number available for sale, yet online shopping provides customers with more opportunities to find such products. Furthermore, some chains that have both physical stores and online stores offer promotions online only to encourage customers to shop online.

2.2.5 Product category

Chiang, Ruby and Dholakia (2003) explained that although nearly everything can be bought online, some specified products do not sell well online, such as perishable food and fruits; packaged electronics products, computers and books are easy to store so these products are more popular with online shoppers.

Jones (2003) agreed that not all products are popular online. Some kinds of products are easy to keep and thus are popular online: such as books, DVDs, CDs, electronics products and household goods. Other products, such as groceries, vegetables and fruits are not as popular and this is expected given that people tend to trust what they see when they buy fresh foods and a proper inspection is not possible when they select the goods online. However, there are still some supermarkets that provide online shopping services including fresh foods that are hand-selected by staff members.

2.2.6 Age

According to a report by Horrigan (2008), “online adults under age 30 are twice as likely as senior citizens to see the internet as a place for bargain shopping and far more likely than seniors to see the convenience and time-saving benefits of online shopping”. Many adults under age 30 are students or just graduated students. Therefore, the student group is a big market for online shopping. Moreover, students often have leisure time that can be spent on the Internet. Also, students generally accept and understand new technology quickly and easily in comparison with other age groups and professions.

Xu and Paulins (2005) emphasised that people of different ages have different incomes and attitudes. For example, students as a group do not have much

expendable income and they are often supported by parents or their government; some elderly people on the other hand are more familiar with traditional shopping styles and that means they would generally prefer to shop in retail stores.

2.2.7 Service

Li and Zhang (2002) proposed a list of service factors that are related to online shopping attitudes and behaviour:

- (1) Customer communication channels/ease of vendor contact.
- (2) Response to customer needs.
- (3) Accessibility of sales people.
- (4) Reliability of the purchasing process/process uncertainty.
- (5) Timeliness of orders or services/waiting time.
- (6) Availability of personalized services.
- (7) Ease of return and refunds.
- (8) Fraud.
- (9) Delivery (speed, tracking and tracing).
- (10) Transaction costs.”

Schlosser, White and Lloyd (2006) concluded that, compared with online shopping, shopping in retail stores has more advantages: such as that sellers can communicate with buyers more easily, customers can get responses to questions more quickly and there are no added costs for delivery and transactions. They also pointed out that if the retail price and the online price are the same, people will normally go to a retail shop to buy products because the customers do not need to pay a shipment fee, nor do they have to wait while the product is being shipped.

According to Lee, Joshi, and McIvor (2007), retail stores are still more popular due to the fact that the customer can elicit more direction and assistance in a retail store. The customer can ask a staff member everything that they want to know about a product directly; this kind of service is not easily acquired when buying online. If

customers have little knowledge about the products they want to purchase, they will more often go to a retail shop to find a better informed member of staff who may provide them with some useful direction. In shops, customers can ask the staff to explain the functions of the products on sale and to show them how to use these products. Nowadays, in order to remedy this information deficit in online shopping, some online shopping websites provide three dimensional video clips for customers with explanations of the functions and features of their products.

2.2.8 Safety

According to Arar (2008), there are some added risks involved when people shop online: such as guarantee problems, cheating, security of credit card payments, fake products and so on. Arar's research found that the fake products are more popular online, because when people shop online they can only see the pictures that are provided by the sellers. Sometimes the buyers receive a different product from the one they saw before and in some cases online it is not easy to get a formal and standard receipt of the product purchase. If the product has problems or faults, it can be hard to find the seller quickly for a refund or repair.

Monsuwe, Dellaert and Ruyter (2004) contended that online shopping is likely to be the main shopping style all over the world if it can be more safe and formalised. It is important to note that people even now often choose to shop at popular and famous online websites. These websites as a rule provide more rigorous safety platforms for online buyers than other, smaller online shopping websites.

Safety is one of the biggest problems associated with online shopping. According to the research by Michael, Paul & Surgi (2005), the two most common ways to maintain the safety of online shopping are data encryption and third party monitoring systems. These two methods are widely used by online shopping websites.

Gupta, Su and Walter (2004) discussed the issue of payment procedures that can be secured from both the bank side and the online shopping side. Online shopping websites can encrypt the online shoppers' details, sending only the encrypted payment information to the bank. Only after the bank decrypts the payment information can the payment be processed. The bank then encrypts the verified

information of the payment and sends it to the online shopping website. When all of the above steps are finished successfully, the payment can be confirmed at last.

Schoenbachler and Gordon (2002) explained that third party monitoring systems were invented after the advent of encryption technology. This third part system is used for some websites that provide a platform only for online trading: such as www.ebay.com. This kind of website does not sell products directly; instead registered users can sell products through the website. In this case, the owner of an online website plays the role of the third party. In the third party monitoring system, the quality of the products may be checked by the third party. If the quality of the products is deemed satisfactory by the third party, the confirmation of the product will be sent to the buyer. The buyer can then pay for the products. The payment is also confirmed by third party as having been successfully lodged. When the third party confirms the payment, the products will be delivered to the buyer (Kwon & Lee, 2003).

2.2.9 Trust

Lynch, Kent and Srinivasan (2001) noted that many customers do not trust online shopping. These people know the existing bugs involved in online shopping: credit card payment is not as safe as we may think; hackers are using e-mail and websites for cheating and finding out people's credit card details.

According to Yoo, Lee and Hoffmann (2008), one key factor influencing why people buy products either online or in retail stores is trust, because loyalty between sellers and buyers is not easy to construct. Customers often only trust what they have seen in a physical sense. For many customers, particularly the older customers who are familiar with shopping in retail shops, it is not easy to accept new technology completely, especially if they have bought certain products at the same shop for many years (Burke, 2002).

In the findings of research by Horrigan (2008), more than 60% of people in the U.S. are concerned about payments made in online shopping, although some of them are quite familiar with online shopping in their experience. In that research, it is also

explained that more people would choose online shopping if they could trust the e-commerce environment more.

2.2.10 Knowledge base

According to the research by Budzikowska et al. (2001), one factor influencing customer purchasing habits is customer knowledge. Some people are not interested in online shopping because they lack knowledge of the Internet, computers and modern technology. They also do not want to take the time to learn about those areas. They would like to go to retail shops to ask staff for the information that they want and to choose products by physically seeing and touching the products.

Trifts (2000) noticed that “different groups of people with different knowledge backgrounds regarding computers may choose different ways to buy the products: for example, many students may prefer shopping online for computers because they have more prior knowledge of computers on which to base their research, while older people may choose to buy computers in the retail shops because they require more information and assistance from a salesperson and they may not be comfortable with online shopping forms”.

2.3 Summary

This chapter, by reviewing previous literature, has summarised the development of online shopping and the reasons why people choose to shop online. Most of the reviewed papers are chosen from the period 2003 to 2009 with only a few papers dated before 2003 because of the limitation of the topic and research area.

Online shopping has been developed since its emergence with the Internet in the 1990s. The development of online shopping has closely followed the development of internet technology and the popularity of computers. As more and more people have come to own computers and to use the Internet, more and more people have subsequently had experiences in online shopping.

The discussed parameters that affect students' decision making on shopping online or in retail shops included price, convenience, efficiency, product range, product category, age, knowledge base, safety and trust. Some people prefer shopping online because of the price, the speed of searching tools and the great variety of product choices, while others prefer to purchase in retail stores due to issues of trust, safety and level of service. Some literature identified the primary reasons behind these differing preferences to be the shopper's age and knowledge.

To summarise, most previous research studied whole populations and whole product ranges; there is a need for research that concerns a specified target group and product category. This research is conducted on the factors influencing students' decisions on shopping for computers online or in retail stores.

3. Research Methodology

“A quantitative approach is one in which the investigator primarily uses post positivist claims for developing knowledge, employs strategies of inquiry such as experiments and surveys, and collects data on predetermined instruments that yield statistical data” (Creswell, 2003).

According to Rohrer (2008), “qualitative methods are much better suited for answering questions about why or how to fix a problem, whereas quantitative methods do a much better job answering how many and how much type of questions.”

In this research a mixed methodology was used, which meant that both quantitative and qualitative methodologies were chosen for gathering the research data. A survey was used to collect the quantitative data, and the qualitative data included interview results. In order to obtain valid results it was necessary to collect data from a sufficiently large sample and this could only be done efficiently by means of an online survey. Also, a survey can be completed anonymously which protects the privacy of respondents and may encourage more to respond.

The survey and interview questions were designed to answer the primary research question:

1. What are the factors that influence decisions on whether to purchase computers online or at a physical store?
 - a) Will variations of product influence relative variations in purchase decisions?
 - b) What opinions do students express when comparing online purchasing with retail purchasing?
 - c) What are the pros and cons of purchasing online and of purchasing in a retail store?
 - d) What parameters affect students' choices as to how they buy computers?

- e) Which method will students predominantly choose to buy computer products in the future and why?

The survey questions mainly focused on buying behaviours whereas the interview questions focused on the reasons underlying these behaviours. Variables measured in the survey included gender, qualification level, year of purchase, products purchased, method of purchase, prices and type of computer purchased.

3.1 Data collection

According to Creswell (2003), the proper data collection methods should be chosen for the particular research methodology.

In this part, the detailed methods which were used to collect data are discussed. There were three procedures for collecting data: these were literature review, survey for quantitative data and interview for qualitative data.

3.1.1 Literature review

In this step, some current and past literature was reviewed. After reviewing this literature, a range of factors that affect students' decisions on shopping online were identified. Also, the gaps in the research into this subject area were found out by studying literature about online shopping, shopping habits, the reasons why people choose to shop online and which groups of people would prefer shopping online.

Normally, the literature for review was chosen from books, journals and conference papers. Sometimes a good selection of literature could be found online or in a technical newspaper. When relevant literature was found, the researcher could write a summary of this literature: recording some key factors for future study and highlighting some qualitative data that can be used. The data that was collected from the literature review was used in comparison with the data collected directly by researcher.

3.1.2 Survey for quantitative data

The quantitative method helps to gather key data and in this study the survey method was used to collect quantitative data (see Appendix 1 for the questionnaire

form). Straub, Gefen, and Boudreau (2004) pointed out that the survey is normally used for quantitative methodology as an experimental instrument for capturing data. The survey for this study had been designed by reviewing relevant literature, and most survey questions were in multiple choice formats to facilitate the gathering of standard data. By reading some previous studies and literature about online shopping a number of possible decision making factors were found. These factors helped to guide the design of the questionnaire as it included questions relevant to such factors identified in Section 2: including price, service, convenience, efficiency, trust and safety. The data gathered from this questionnaire were then collected for analysis and comparison.

The survey was divided into three parts, which were

- General questions.
- Questions on buying products.
- Questions on buying computers.

General questions in the survey asked the gender and qualification of the students. This part was used to collect some personal details, with the exception of name, contact details and any other personal information.

The second part of the survey was concerned with the behaviour of students when purchasing products of a wide range of types. In this part, the number of students who have experience in shopping online in general was counted. Also, in this section students were asked when they started shopping online. The section also included questions on the student's feelings and impressions about online shopping and retail shopping. At the end of this part of the survey, the students were asked about the popularity of the products that they choose to buy online.

The last part of this survey was the most important part of the survey according to its relevance to the study's key questions. This part particularly concerned the computer, which was chosen as the sample product in this research. The questions included how the student acquired their latest computer; when they bought their latest computer; whether the computers that they purchased were brand new or

second hand; the price and type of the computers that they purchased. The most important questions in this part helped to gather statistics of students who purchased computers. The questions on factors involved in purchasing seek to prioritise the identified factors of safety, trust, efficiency, convenience and price of shopping online and in retail shops.

The online survey system www.surveymonkey.com was used to provide the survey online. After the questionnaire was uploaded online it could be accessed from a unique link; this link was e-mailed to Unitec computing students (using Blackboard). This was an efficient way to distribute the questionnaire. If recipients were interested in the questionnaire they clicked on the unique link to take part in the online survey. In this way the participants who completed the survey were anonymous and thus the survey data remained confidential.

In this research, the factors that affect the students' decisions on whether to buy a computer online or in a retail store were investigated. There were eight main factors for this decision identified by literature review: these were price, convenience, efficiency, service, trust, safety, knowledge base and product range. The book "Multivariate Data Analysis" by Hair, Black, Babin, Anderson and Tatham (2006) provided a "rule of thumb" that states that for each factor there should be at least 10 observations and the minimum absolute sample size should be 80 observations. The number of Unitec computing students using Blackboard is approximately 200 and 92 students completed the survey. According to Creative Survey System's (2009) online sample size calculator, a sample size of 92 with a confidence level of 99% has a confidence interval of 9.91%. Thus, a sample size of 92 is acceptable for this research, which used a mixed method "exploratory" approach and did not involve hypothesis testing.

3.1.3 Interview for qualitative data

The qualitative method was aimed toward collecting some more detailed data. The interview method was used for collecting qualitative data (see Appendix 2 for the interview form). Nine interviewees were chosen after finishing the survey questionnaire. The interview questions paid attention to detailed information and the

student's feelings and impressions as to why they chose to buy computers online or in retail shops. The advantages and disadvantages of buying computers online and in retail shops were also discussed. The interview results were categorised into three parts according to the habits of the interview subjects: students who bought computers online only, students who bought computers in retail shops only and students who bought computers online and in retail shops. In each interview category, there were three interviewees.

The students who agreed to take an interview contacted the researcher by e-mail. The address was provided with the last question of the survey. The interviews were held in several ways: face-to-face, by phone or online interview; it was up to the interviewees to choose their preferred interview method. Every interviewee was given an information sheet (see Appendix C) and a consent form (see Appendix D) before the interview.

The interview questions were concerned with more details about the students' choices to buy computers online or in retail stores, the issues involved in buying computers online or in retail stores, the advantages of buying computers online and those of buying in a retail store, as well as some questions that were more specific to the participant category. The interview results provided qualitative data to complement the quantitative data gathered in the survey and to help with the analysis of why students chose to buy computers online or in retail shops.

3.2 Data analysis

There were two kinds of gathered data in the present study: survey results for qualitative data and interview results for quantitative data. For each kind of data there should be some proper tools and methods chosen for data analysis. In this section the methods and tools for analysing data are presented.

3.2.1 Survey results

According to Trochim (2006), "the statistics are always used describe the basic features of data in a study". After enough respondents finished the survey, the

results were downloaded from the survey website, www.surveymonkey.com, and analysed. The results could be downloaded separately by each question or all answers together. The data were compiled by www.surveymonkey.com automatically. The data that were downloaded from www.surveymonkey.com were categorized first into data from questions targeted to buying general products and data from questions targeted to buying computers. The questions about buying general products included questions regarding some basic details about the students and also some questions about online shopping related to all product ranges and not computers specifically. The questions in part 3 of the survey concerned the respondents' habits related to online purchasing of computers.

Microsoft Excel 2007 was used for analysing the results. The data results could be downloaded from www.surveymonkey.com in Excel format directly. Also, there were some tools available on "survey monkey", including the filter tool, which was highly useful. The filter tool allowed the data collector to organise and view subsets of data for advanced analysis. This filter tool was similar to Excel's equivalent tool, but it was more convenient and easier to use. Therefore, most data in this research were filtered by using "survey monkey" tools, with a smaller amount of data processed using Microsoft Excel 2007 software. Due to the creation of filters, the set of responses that met specified criteria established by the data collector earlier could be seen. This function allowed the data collector to display subsets and find patterns, and by filtering some of the data, this data could be analysed more easily. For example, the number of respondents who chose online shopping because they thought that online shopping was safe could be calculated after filtering out the respondents who chose retail shopping. Also the data from "survey monkey" could be downloaded in a range of different figures and presentations: such as bar graph, pie graph and line graph. The style and colour of the figures could be customised as well. For each question, the proper figure was chosen for download, yet some tables needed to be created for comparison.

The data from previous work were compared to the data collected in this study. By comparing findings with the previous data it might be possible to identify trends as to the choices behind students' computer purchasing practices (Burke, 2008).

Some related information could be compared together: such as the number of students who chose online shopping and retail shopping. Also, the data was compared with information presented in other literature, including data from other countries. When comparing data from literature and the current researcher, Excel software was used more. Both sets of data, from literature and the survey, needed to be input into an Excel spreadsheet and then the proper figures or tables were generated.

3.2.2 Interview results

Content analysis of the interview data was used to identify and categorise the feelings and factors involved when students chose how to buy a computer. The interview results could be distinguished in three parts: answers from the students who buy computers online, answers from students who buy computers in retail stores and answers from students who buy computers through both methods. After the data were unified they were analysed to find out the factors that affect students' decisions on the way to buy computers: these factors included, but were not limited to, price, service, product range and security.

All the results of interviews were recorded in Microsoft Word 2007 files. The results were compiled according to question and category. The interviewees' answers from the same category were then put together and the interviewees were identified with a unique letter, such as Student A, Student B and so on. Finally, similarities in answers from the interviewees were calculated for analysis whereby the answers from different categories were compared and analysed. Some factors that affect students' decisions on buying computers online or in retail shops were analysed by interview results more effectively and in more detail than through the survey results.

3.3 Summary

The mixed methodology, combining qualitative method and quantitative method, was chosen for this dissertation. By using mixed methodology, more comprehensive

information could be collected for analysing the factors that affect students' decisions on shopping online or in retail shops.

In this research, the quantitative data for analysing the factors that affect students' decisions on shopping online or in retail shops were collected as survey results. The survey results were comprehensive and standardised with survey questions being of the multiple choice question type. The survey had an added benefit that it did not take too much time to complete. Also, as the survey was accessible online, it was easy to be delivered to target students. The online tools from www.surveymonkey.com, as well as Microsoft 2007 Excel, were used for analysing the survey results. The survey results were filtered for categorising and comparing with some previous papers.

The interview results for qualitative data provided further data for analysing the factors that affect students' decision making on shopping online or in retail shops. The interview results helped the analysis of some factors that were not easily analysed via survey results. All interview results were recorded in Microsoft Word files.

By analysing survey results for quantitative data and interview results for qualitative data, the factors that affect students' decision making on shopping online or in retail shops were defined, explained and analysed.

4. Data Results and Analysis

4.1 Introduction

In this section two kinds of results are presented and analysed: the survey results for the quantitative data and interview results for the qualitative data.

Section 4.2 presents the survey results. There are two parts to the survey results, general questions and results for buying computers. The survey results are listed by the order of the questions. The interview results in section 4.3 are presented by category and question. There are three categories which are the students who bought computers online before, the students who bought computers in retail shops only and the students who bought computers both ways. In section 4.4 the survey results are analysed by cross-tabulation and by comparing results obtained in this research with those reported in the literature. The interview results supplement the analysis of the survey results by adding a qualitative dimension and depth. In this chapter, the figures and tables are numbered by sections (E.g. Figure 4.4.1 means the first figure in section 4.4).

4.2 Survey results

All respondents were from Unitec and were studying computing. Of the 200 computing students surveyed, 92 responded: 62 males and 30 females, 54 undergraduates and 38 postgraduates (see Table 4.2.1). With the population size of 200, the confidence interval is nearly 10% and the confidence level is 99% according to the Creative Survey System (2009). This confidence interval is high enough to analyse the factors which affect the students' decision making on buying products online or in retail shops.

The sample had higher proportions of females and postgraduate students than the population from which it was drawn which could lead to some bias in the results. Also, not all 92 respondents answered every question in the survey, for example only

86 responded to the question about how they acquired their latest computers and 90 responded to the question about buying new or secondhand.

Table 4.2.1: Gender and level of respondents

	Number	Percentage
Male students	62	67.4%
Female students	30	32.6%
Undergraduates	54	58.7%
Postgraduates	38	41.3%

4.2.1 Results for buying general products online

The general portion of the survey is about basic details of the respondents. Next are questions about their shopping preferences. In this part the questions are about shopping online or in retail shops with respect to the whole product range. The results are listed in the order of the questions.

Table 4.2.2 shows that the great majority (more than 80%) of respondents had bought products online before.

Table 4.2.2: Percentage and number of respondents who have bought products online before or not

Bought online before?	Percentage	Number
Yes	80.4%	74
No	19.6%	18

Table 4.2.3 below shows the years when the 74 respondents who had online shopping experience started online shopping. None started in 2009.

Table 4.2.3: The year when respondents started shopping online

Year	Percentage	Number
2004 or earlier	39.2%	29
2005	12.2%	9
2006	12.2%	9
2007	20.3%	15
2008	16.2%	12

Table 4.2.4 shows respondents' opinions about prices, safety and service when shopping online or in retail shops. The most common opinions were:

- online shopping is cheaper
- retail shopping is safer
- retail shopping has better service.

A significant minority (25% to 35%) of respondents thought there was no difference between prices, safety and service of online and retail shopping.

Table 4.2.4: Respondents' feedback of advantages and disadvantages of online vs. retail shopping by percentage

	Online	Retail shop	NO difference
Which way has cheaper price?	57.3%	8.0%	34.7%
Which way is safer?	2.7%	72%	25.3%
Which method offers better service?	9.0%	61.5%	29.5%

Table 4.2.5 shows the rank of the popularity of various products which respondents bought online. Respondents bought electronics products the most, followed by gifts, products that fell into the 'other' category (being books, toys, and travel tickets), then household goods (kitchenware, furniture and daily use goods) and finally clothing.

Table 4.2.5: Popularity of various products which respondents bought online (5 is most popular and 1 is least popular)

	Average rating
Clothes	2.20
Household goods	2.68
Electronics	3.59
Gifts	3.07
Others	3.04

4.2.2 Results for buying computers

The computer was used as a sample product for analysing the behaviour of online shopping by Unitec students. The following results are about the online buying of computers. Table 4.2.6 shows that there were 86 respondents in total. Around a quarter of respondents bought their computers online and more than two thirds of respondents bought in retail shops. The other respondents were given their computers as gifts.

Table 4.2.6: The percentage and count of how respondents acquired their latest computers

	Percentage	Count
Bought online	26.7%	23
Bought in retail shop	67.4%	58
Gift	5.8%	5

Table 4.2.7 shows that the highest proportion of respondents acquired their latest computers in 2008, followed by 2009, 2007, 2006, 2004 or earlier, and finally 2005. However, as the survey was taken in the middle of 2009 the number of respondents who acquired computers in 2009 is likely to be significantly higher by the end of year.

Table 4.2.7: The percentage and count of when respondents acquired their latest computers

Year	Percentage	Count
2004 or earlier	4.4%	4
2005	2.2%	2
2006	13.2%	12
2007	17.6%	16
2008	39.6%	36
2009	23.1%	21
Total	100%	91

Table 4.2.8 shows that the great majority (more than 90%) of respondents acquired brand new computers.

Table 4.2.8: Percentage and number of respondents who bought brand new and second hand computers

	Percentage	Number
Brand new computers	91.1%	82
Second hand computers	8.9%	8

Table 4.2.9 shows that the most popular price range for computers was \$1000 to \$1999, followed by \$2000 to \$2999, \$500 to \$999, above \$3000, and finally under \$500.

Table 4.2.9: Percentage and count of respondents who acquired computers with different values

Price range	Percentage	Count
Above \$3000	7.6%	7
\$2000 - \$2999	27.2%	25
\$1000 - \$1999	34.8%	32
\$500 - \$999	21.7%	20
Under \$500	6.5%	6
Don't know	2.2%	2

Table 4.2.10 shows respondents' opinions about prices, safety, service, efficiency and product range when shopping for computers online or in retail shops. The most common opinions were:

- online shopping is cheaper
- retail shopping is safer
- retail shopping has better service
- online shopping is more efficient
- online shopping has a wider product range.

A significant minority (25% to 35%) of respondents thought there was no difference between prices, safety and service of online and retail shopping. These results are similar to those in Table 4.2.4 for general products.

Table 4.2.10: Percentage of distribution of shopping's price, safety, quality of service, efficiency and product range in respondents' shopping experience for computers

	Online	Retail shop	No difference
Which way has cheaper price?	45.1%	25.3%	29.7%
Which way is safer?	2.2%	72.5%	25.3%
Which method offers better service?	5.6%	60.7%	33.7%
Which method to find a suitable computer most quickly and easily?	53.8%	31.9%	14.3%
Which method allows finding more product models?	69.6%	18.5%	12%

Table 4.2.11 shows the rank of the importance of the reasons why respondents bought computers. The most important reason is studying, followed by web surfing, chatting, gaming, and finally other reasons (watching movies, listening to music and working).

Table 4.2.11: Importance of the reasons why buying computers (5 is most important and 1 is least important)

	Average rating
Studying	3.84
Gaming	2.74
Web surfing	3.82
Chatting	2.95
Others	2.11

Table 4.2.12 shows that the highest proportion of respondents chose computers by themselves. This was followed by searching the web, help from friends, and finally help from staff in retail shops.

Table 4.2.12: How respondents choose their computers

	Percentage	Number
By themselves	58.6%	51
With friends	14.9%	13
With staff in retail shops	6.9%	6
By searching on web	19.5%	17

Table 4.2.13 shows that nearly half the respondents who responded to the survey were very proficient with computer hardware technology. This was followed by quite proficient, little proficient and hardly proficient.

Table 4.2.13: Proficiency of respondents in computer hardware technology

Level	Percentage	Number
Very proficient	46.7%	43
Quite proficient	30.4%	28
A little proficient	19.6%	18
Hardly proficient	3.3%	3

Table 4.2.14 describes respondents' feelings after purchasing their computers. In this question, the respondents were asked to tick more than one choice. The most common opinions (held by 70% to 75% of respondents) were:

- the process used was efficient
- the process used was convenient
- the process used was safe.

Table 4.2.14: Percentage of respondents' feedback after purchasing computers

	Percentage	Number
Efficient	75.6%	68
Convenient	72.2%	65
Safe	70.0%	63
Inefficient	2.2%	2
Inconvenient	3.3%	3
Unsafe	3.3%	3

4.3 Interview results

In this section the interview results are reviewed and summarised. The results are presented by category and question.

Of the 92 students who responded to the survey, nine students were interviewed. Two of them took the interview by e-mail; two of them took the interview by phone; one interviewee answered the questions online using a chatting tool and four interviewees took the interview face-to-face. Of these nine interviewees, three had bought computers online but not in retail shops; three had bought computers in retail shops only and the other three had bought computers online and in retail shops.

4.3.1: Interview results for buying online

Below are the responses to the questions for the three students who bought online.

1. Why did you choose to buy a computer online?

In this question two students said that they chose online shopping because of the price. They thought buying online was better value and the price was lower. One student pointed out that he could customise the computer model online and this was important to him. He has a high proficiency in computer hardware technology.

2. What kind of websites do you use to influence your decision?

The three students normally went to some technology websites and online shopping websites such as www.pcworld.co.nz, www.pricespys.co.nz and www.trademe.co.nz. One student said he also would go to the homepages of some electronics shops, such as www.dse.co.nz and www.bondandbond.co.nz. They commented that information like price, model and technical data comparisons can be found on these sites and can influence their decisions.

3. How do you feel about buying a computer online?

All three students were satisfied with the online shopping. One student felt that he can always get some cheap computer products. The other two students thought that online shopping was efficient and convenient because of the powerful online search engine. They commented that it was an efficient use of their time searching and buying online.

4. Do you think buying a computer online is the best method or not? Why?

Only one student thought online buying computers is the best method. All three students agreed the online price was cheaper. One student said if you want to buy something online, you should have some related knowledge about what you want to buy and this is important before making a purchase.

Another student stated that the service in retail shops was better than online and the remaining person was concerned about the safety of online shopping.

5. Did you encounter some problems when buying a computer online? If yes, please describe briefly.

Two students encountered some problems when shopping online. These two students said they had bought fake and faulty products online before. The other student said he always prepared lots of knowledge of the products which he wanted to buy before buying to avoid being misled or cheated by purchasing fake products.

6. Will you keep shopping for computers online or not? Why?

All three students were going to continue shopping online. Two students said the price was cheaper and the other student stated that he could find a wider product range online. These positives outweighed the negatives for them.

7. Will you try to buy your next computer in a retail shop? Why?

Two students said that they might buy their next computers in retail shops if they could find cheaper computers in retail shops. The other student would not buy computers in retail shops because he preferred to customise the computer model online.

4.3.2: Interview results for buying in retail shops

The responses of the three students who bought computers in retail shops only are described below.

1. Why did you choose to buy a computer in a retail shop?

Two students mentioned that they bought in retail shops because they thought it was safe. The other student said he could get better service in retail shops.

2. What kind of retail shops do you use to buy computers?

All three students chose electronics or computing shops to buy computers, such as Dick Smith, Bond & Bond and Harvey Norman. Two students said they chose come cheaper stores such as some Chinese computer shops like PBTech. All preferred having a real person to deal with.

3. How do you feel about buying a computer in a retail shop?

One student thought by buying a computer in retail shops you get better service and another student said buying in retail shops is safe. The remaining student stated the reasons were both safety and better service.

4. Do you think buying a computer in a retail shop is the best method or not? Why?

All three students thought shopping in retail shops was the best shopping method because of safe trading and better service. They thought there was more security when buying in retail shops. One student also commented that he was familiar with shopping in retail shops.

5. Did you encounter some problems when buying a computer in a retail shop? If yes, please describe briefly.

Only one student met problems when shopping in retail shops because of software issues. He said the shop charged some money for fixing that problem.

6. Will you keep shopping for computers in retail shops or not? Why?

Two students said they would continue shopping in retail shops because of safety and shopping habit. The other student found the online price was cheaper so will buy online in the future.

7. Will you try to buy your next computer online? Why?

Only one student said he would try to buy his next computer online because he found some websites offered cheaper price. Another student said if he had enough knowledge about online shopping he would try online shopping. The remaining student said he would not try online shopping because he did not trust online shopping.

4.3.3: Interview results for buying in both ways

In this category there are three students who had experience of buying computers online and in retail shops.

1. Why did you choose to buy a computer online or in a retail shop?

Two students said they used to buy computers in retail shops before they were familiar with online shopping. When online shopping became more and more popular, they tried buying online and they found the online price was cheaper and online shopping was more convenient. They cited the search engines as providing this convenience. The remaining student said he always compared the online price and retail price and then chose the cheaper one.

2. What kind of retail shops or websites do you use to buy computers?

All three students said they used electronic shops such as: Dicksmith, Bond & Bond and some small computer retail shops. For online shopping, these three students liked www.pricespys.co.nz and www.trademe.co.nz most.

3. How do you feel about buying computers online and in retail shop?

Two students pointed out that online prices were cheaper than retail prices and they could find more product models online. The remaining student said online buying computer was not safe.

4. Which method do you think is better for buying computers: online or retail? Why?

Two students answered that online shopping was better in their opinion. These two students both concentrated on price, this was their main motivation. The remaining student could not tell which way was better.

5. Did you encounter some problems when buying a computer online or in a retail shop? If yes, please describe briefly.

Two students encountered problems when they shopped online. One student bought a laptop from overseas without realising he had to pay tax. Another student bought a second-hand computer which then gave him some problems. However no one encountered problems when they bought in retail shops.

6. Which method will you choose to buy your next computer in the future? Why?

One student said it depended on the price. Another student preferred online shopping because he thought he could find cheap products and more product models online. The remaining student said “if it is safe enough to buy computers online, I will prefer online shopping. I am always afraid of the payment online.”

4.4 Data analysis

4.4.1 Trend of online shopping

Figure 4.4.1 presents the percentage of respondents who have shopped online against the year when they started. Most respondents (60.9%) started buying online after 2004: 12.2% of respondents started online shopping in both 2005 and 2006, 20.3% in 2007 and 16.2% in 2008. None started in 2009.

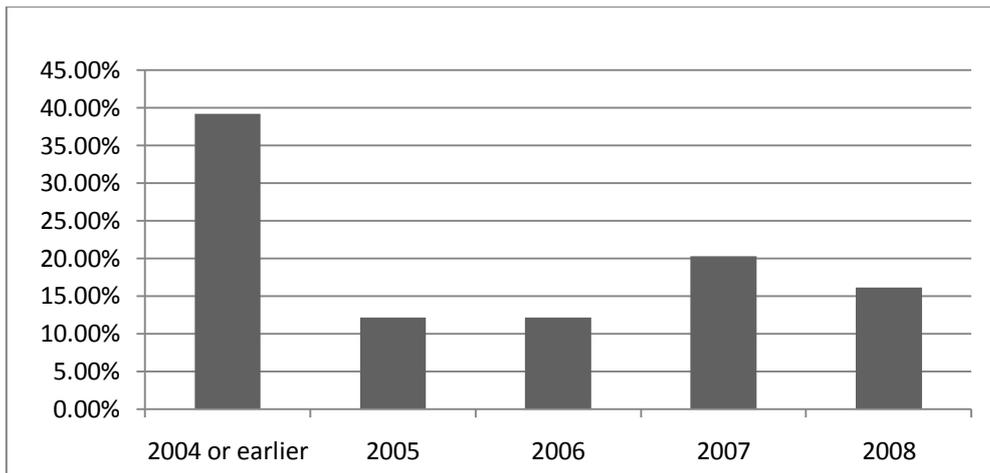


Figure 4.4.1: Percentage of respondents commencing online buying

Figure 4.4.2 below shows the years in which respondents bought their latest computers. However this survey was taken in the middle of 2009. Therefore only six months' data from 2009 are represented in this graph. The percentage of respondents who bought computers online in a half year in 2009 is more than the percentage of respondents who bought computers online in the whole of 2006 or 2007. In 2008 fewer respondents bought computers online than in retail shops. Before 2006 no respondents bought computers online.

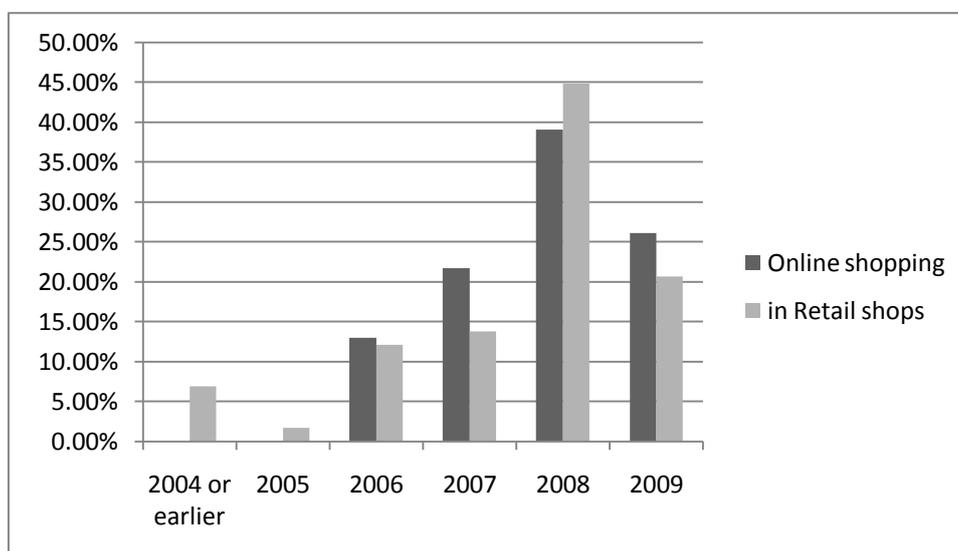


Figure 4.4.2: Percentage of respondents who bought their latest computers online or in retail shops by year

4.4.2 Effect of product category

According to the figure below which shows the popularity rates of products, it is clear that most Unitec respondents prefer buying electronics products online (popularity rate is 3.59). Among Mid-western American University students, household goods were the most popular to be bought online (Levin, Levin, & Weller, 2005). Clothes are the least popular product to be bought online by students in both Unitec and the Mid-western American University.

According to Levin, Levin and Weller (2005), when people buy clothes, they need to try them first to find the suitable size so most people do not choose to buy clothes online. Household goods are very popular because the price of them is not very expensive and they tend to be more generic. The people who are going to buy household goods online are less concerned about the safety of their payment. Electronics are popular as well because of the product range online. When people search online, they can find wider product ranges than in retail shops. People can also buy travel tickets, DVDs, CDs and books online more cheaply.

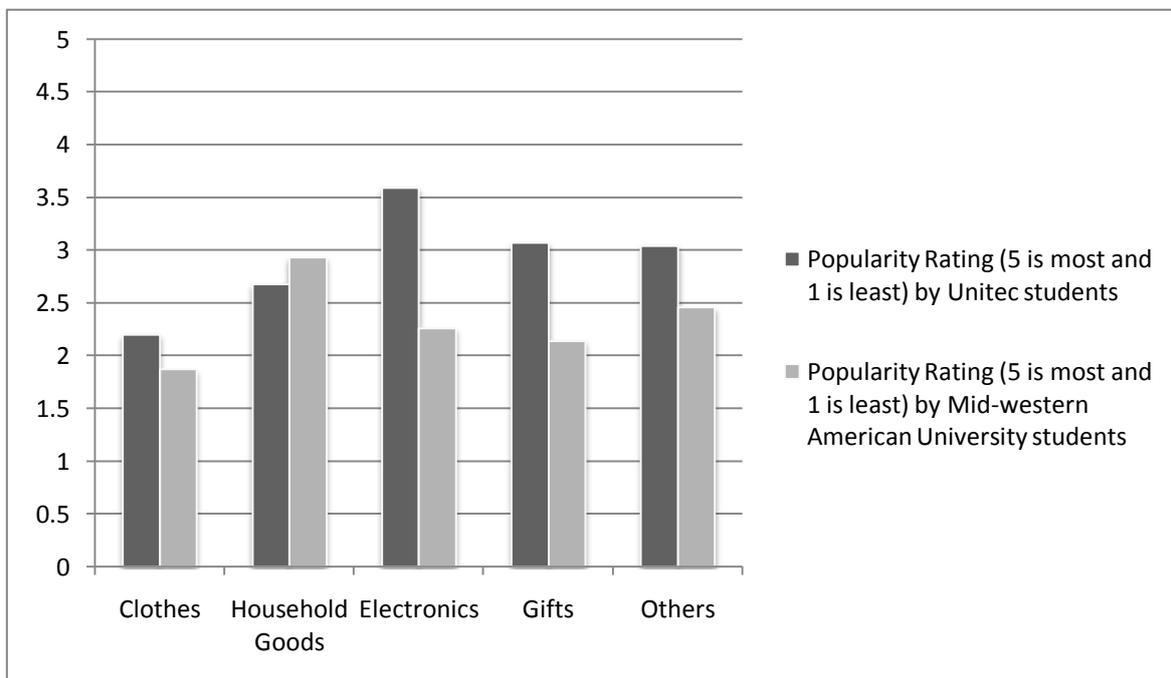


Figure 4.4.3: Comparison of the average rating of products which are bought online by students from Unitec vs. Mid-western American University (Levin et al., 2005)

4.4.3 Effect of cost, safety, service, efficiency and convenience

Cost, safety, service, efficiency and convenience are the most important factors which affect students' decision making on choosing online shopping or not. This was clear in the data and results. These factors were also what students considered when they bought computers.

Second hand computers are generally cheaper than new computers, however Table 4.2.8 in section 4.2.2 showed that only 8.9% of respondents acquired second hand computers. From the interview results, one student who bought computers online before said that he would be concerned about the quality and warranty of the computers online because he could not check the computers which he was going to buy online, so he normally chose buying brand new computers online. However there is one student who bought second hand computers online. This student explained that he would not be concerned about the quality and warranty of the computers because he is very familiar with the computer hardware technology and the only important thing he cared about is price. However, this result shows that the students are concerned about the safety of online trading.

When considering whether buying online is cheaper or not, the figure below shows the results from U.S and Unitec. 78% of American respondents and 57.3% of Unitec respondents think that buying online is cheaper.

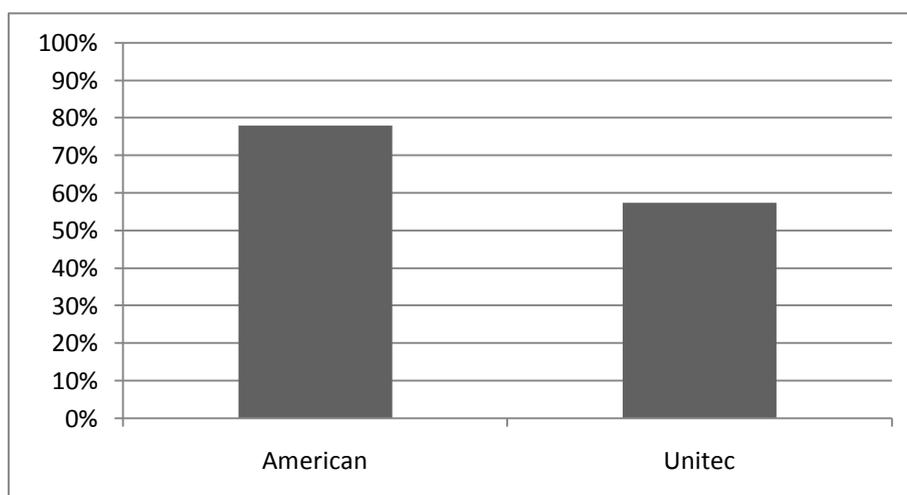


Figure 4.4.4: Comparison of the percentage of people who think shopping online is cheaper in U.S. (Horrigan, 2008) and Unitec

As seen from Figure 4.4.5, most respondents did not think online shopping is safe. 75% of US respondents were concerned about the safety of online shopping. 72% of Unitec respondents thought shopping in retail shops is safer than online.

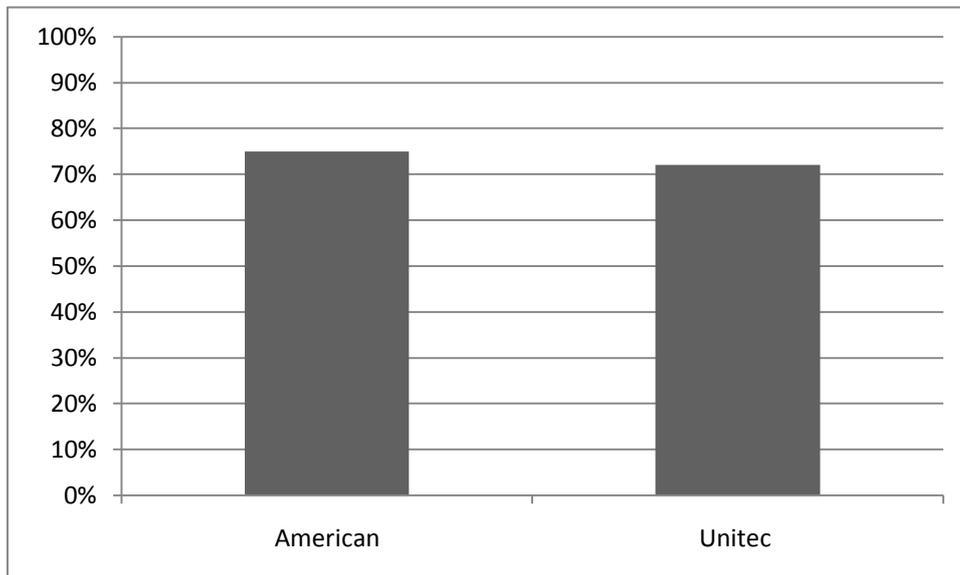


Figure 4.4.5: Comparison of the percentage of people who are concerned about the safety of online shopping in U.S. (Horrigan, 2008) and Unitec

According to Figure 4.4.6, more than 60% of US respondents buying general products and nearly 54% of Unitec respondents buying computers agree that online shopping is really efficient.

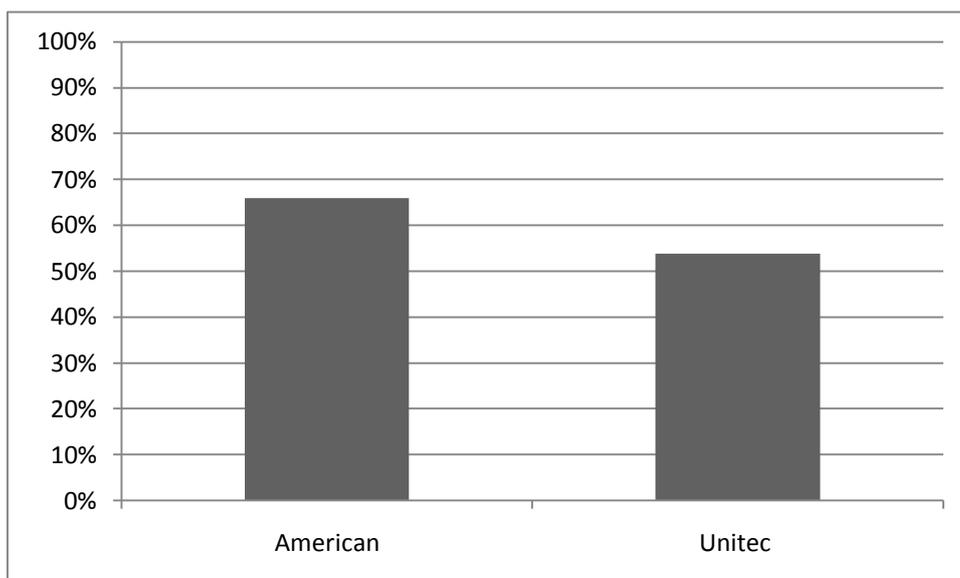


Figure 4.4.6: Comparison of the percentage of people who think shopping online is efficient in U.S. (Horrigan, 2008) and Unitec

In this section next tables are crosstabs from original data which were presented in survey results (section 4.2).

Table 4.4.1 compares the Unitec students' feedback about shopping price, safety and quality of service online and in retail shops in 2009 for general products and computers only. According to the table, respondents gave similar feedback when they buy general products or computers. Especially for shopping safety and quality of service options, the proportions of the respondents' feedback for general products and computers are nearly the same. According to the results, around half the respondents said that the online price was cheaper. However only 8% of respondents thought price in retail shops was cheaper for general products while 25.3% of respondents said retail price was cheaper for computers. Two interviewees gave the reason why shopping in retail shops can be cheaper is sometimes the retail shops would do promotions or clearance for computers and electronics and the price of the computers would be much cheaper than the online price.

Table 4.4.1: Percentages of distribution of shopping's price, safety and quality of service in respondents' shopping experience for general products vs. computer

	Online		Retail shop		No difference	
	General product	Computer	General product	Computer	General product	Computer
Which way is cheaper?	57.3%	45.1%	8.0%	25.3%	34.7%	29.7%
Which way is safer?	2.7%	2.2%	72%	72.5%	25.3%	25.3%
Which method offers better service?	9.0%	5.6%	61.5%	60.7%	29.5%	33.7%

Table 4.4.2 describes the feedback of the respondents after purchasing computers. After they bought computers, most thought the way which they used to purchase computers was efficient, convenient and safe. More than 70% of respondents who bought computers online thought it is convenient, efficient and safe. More than two-thirds of respondents who bought computers in retail shops agreed that it is convenient, efficient and safe. The results show that the Unitec students like their preferred way to buy computers.

Table 4.4.2: Percentage of respondents' feedback after purchasing

Bought computer online		Bought computers in retail shop	
Efficient	82.6%	Efficient	70.2%
Convenient	78.3%	Convenient	70.2%
Safe	73.9%	Safe	66.7%
Inefficient	0.0%	Inefficient	3.5%
Inconvenient	0.0%	Inconvenient	3.5%
Unsafe	4.3%	Unsafe	3.5%

According to the interview results, price is an important factor which affects the students' decision making on buying computers. Four interviewees choose online shopping because of price. The efficiency and convenience are the other main factors which make students buy online.

Some interviewees stated that safety and trust are important factors which limited their use of online shopping. One student stated that if the online shopping is safer, he would prefer online shopping more. Nearly half of the interviewed students encountered problems when they bought computers online.

Service is also a factor which makes students choose shopping in retail shops because the students can get advice from the staff in retail shops. This builds trust. For interviewees who bought computers both online and in retail shops, they chose shopping in retail shops because at that time they were not familiar with online shopping.

4.4.4 Effect of knowledge base

Figure 4.4.7 shows the respondents with different knowledge chose different ways to buy computers. There are four groups of bars and each group stands for the respondents with different levels of computer hardware technology proficiency. The X-Axis shows the method of how the Unitec respondents chose their computer models which they want to buy and Y-Axis stands for the percentages of respondents in each level of computer hardware technology proficiency.

From this graph, it is easy to see that with the different level of proficiency the respondents will use different ways to choose computer models. 78% of respondents with high knowledge chose computer models by themselves, 20% of them chose computers models by searching on the web and none of them chose in retail shops. About 56% of the respondents with medium knowledge chose computer models by themselves and around 15% of them chose computers models with friends. The “Low Knowledge” bars show that less than 30% of respondents with low knowledge of computer hardware technology chose computer models by themselves. The bars of the respondents with no knowledge of computer hardware technology show that none of respondents chose computers by themselves.

Some interviewees said that, if they are not familiar with computer hardware they will ask help from friends and the staff in retail shops. But if the respondents are quite proficient in computer hardware technology they normally choose the computer models by themselves.

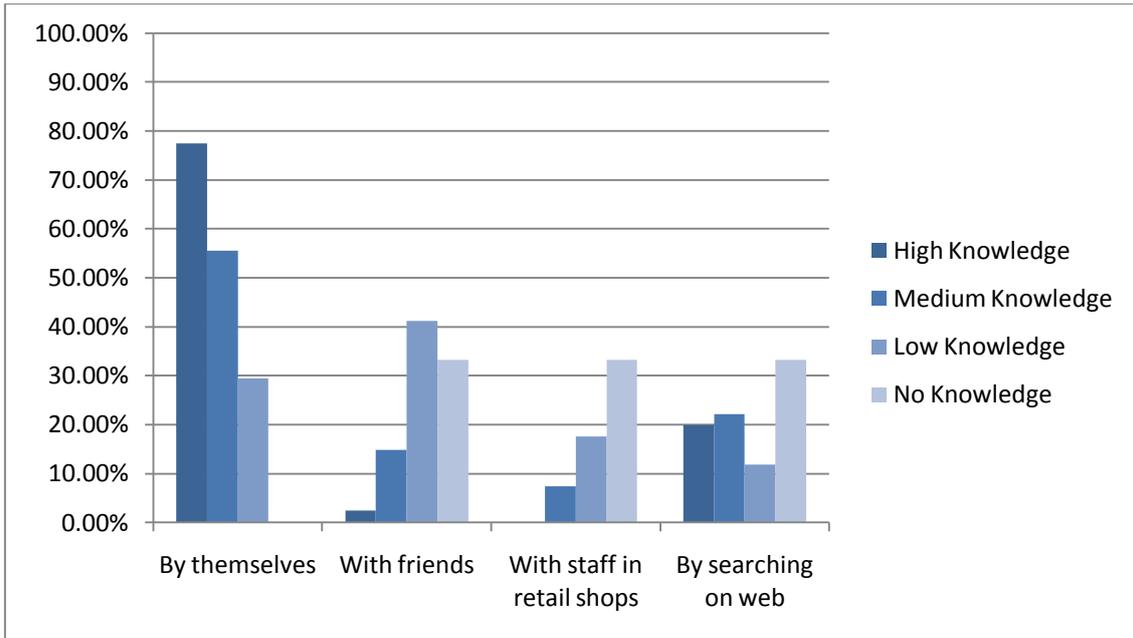


Figure 4.4.7: Computer hardware technology proficiency vs. help when purchasing

According to the interview results, the students who choose online shopping have good knowledge-base of computer hardware technology. They are familiar with the computer technology so that they are confident with choosing computers by themselves. However some students do not have enough computer knowledge so that they need to go to retail shops for some information and suggestions.

4.4.5 Effect of gender

The results obtained in the survey have been further analysed by gender. Table 4.4.3 shows that the distributions of males and females at different qualification levels are very similar.

Table 4.4.3: Distribution of male and female respondents in different qualification levels

	Male	Female
Undergraduate	58.3%	58.6%
Postgraduate	41.7%	41.4%

Table 4.4.4 shows that the proportion of male respondents who had bought products online before and the proportion of male respondents who had bought their latest computers online are both higher than those for females (similar results were found in three surveys in the late 1990's as shown in figure 4.4.8).

Table 4.4.4: The percentage of male and female respondents who have bought products online before and how they acquired their latest computers

		Male	Female
Have you bought products online?	Yes	87.1%	69%
	No	12.9%	31%
How did you acquire your latest computer?	Online	35.7%	10%
	Retail shops	60.7%	80%
	Gifts	3.6%	10%

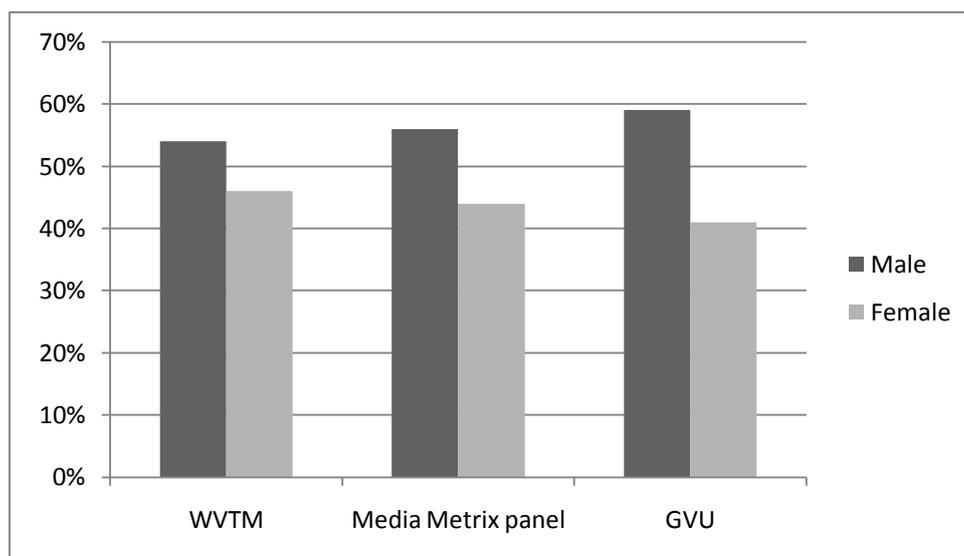


Figure 4.4.8: Distribution of males and females who chose online shopping in the U.S

Source: Bellman, Lohse, & Johnson (1999)

Table 4.4.5 shows that higher proportions of female respondents than males prefer laptops and buying computers overseas.

Table 4.4.5: The percentage of where the male and female respondents bought their current computers and the type of computers

		Male	Female
Where did you buy your current computer?	New Zealand	83.9%	70.0%
	Overseas	16.1%	30.0%
What type of computer did you buy?	Desktop	41.0%	23.3%
	Laptop	59.0%	76.7%

Table 4.4.6 shows that male respondents are more likely than female respondents to buy computers for gaming or web surfing, while female respondents are more likely than male respondents to buy computers for studying, chatting or other reasons.

**Table 4.4.6: Importance of the reasons why male and female respondents bought computers
(5 is most important and 1 is least important)**

	Male	Female
Studying	3.70	4.14
Gaming	2.88	2.42
Web surfing	3.69	3.11
Chatting	2.74	3.42
Others	3.07	3.20

Table 4.4.7 shows that male respondents were more likely than female respondents to believe that buying online was cheaper and buying in retail shops offered better service. There was little difference between male and female opinions about safety.

Table 4.4.7: Distribution of male and female respondents' opinions of shopping's price, safety and quality of service for general products

		Male	Female
When buying a product, which method do you think is generally cheaper?	Online	61.8%	45.0%
	Retail shops	5.5%	15.0%
	No difference	32.7%	40.0%
When buying a product, which method do you think is generally safer?	Online	1.9%	4.8%
	Retail shops	72.2%	71.4%
	No difference	25.9%	23.8%
When buying a product, which method do you think generally offers better service?	Online	3.6%	22.7%
	Retail shops	64.3%	54.5%
	No difference	32.1%	22.7%

According to Table 4.4.8, male respondents bought electronics online most, followed by other products (can be DVDs, CDs, games, travel tickets), gifts, household goods and clothes. Female respondents bought gifts online most and clothes least. Bellman et al. (1999) noted that males and females bought different products online and males were more interested than females in electronics and new technology.

**Table 4.4.8: Popularity of various products which male and female respondents bought online
(5 is the most often and 1 is the least often)**

	Male	Female
Clothes	2.16	2.29
Household Goods	2.67	2.69
Electronics	3.73	3.12
Gifts	2.93	3.47
Others	3.0	3.2

Table 4.4.9 shows male respondents were more proficient in computer hardware technology than females. These differences in proficiency are reflected in how respondents chose computer models: more than two thirds of male respondents did so by themselves compared to only about a third of females. Females were much more likely to choose with help from friends or from staff in shops.

Table 4.4.9: Percentage of male and female respondents' computer hardware technology level and how they chose computer models

		Male	Female
How proficient are you in computer hardware knowledge?	Very	61.3%	16.7%
	Quite	25.8%	40.0%
	A little	11.3%	36.7%
	Hardly	1.6%	6.7%
How did you choose the computer model?	By myself	71.2%	32.1%
	With friends	5.1%	35.7%
	With staff in the shop	3.4%	14.3%
	By searching on the web	20.3%	17.9%

Table 4.4.10 shows that male respondents were more likely than female respondents to believe that buying computers online was cheaper, more efficient and offered a wider product range. Female respondents were more likely than male respondents to believe that buying computers in retail shops was safer and offered better service.

Table 4.4.10: Distribution of male and female respondents' opinions of shopping's price, safety and quality of service, efficiency and product range for computers

		Male	Female
When buying a computer, which method do you think is generally cheaper?	Online	55.7%	23.3%
	Retail shops	19.7%	36.7%
	No difference	24.9%	40.0%
When buying a computer, which method do you think is generally safer?	Online	1.6%	3.3%
	Retail shops	68.9%	80.0%
	No difference	29.5%	16.7%
When buying a computer, which method do you think generally offers better service?	Online	1.7%	13.3%
	Retail shops	59.3%	63.3%
	No difference	39.0%	23.3%
When buying a computer, which method do you think generally allows you to find a suitable purchase most quickly and easily?	Online	59.7%	41.4%
	Retail shops	24.7%	41.4%
	No difference	12.9%	17.2%
When buying a computer, which method do you think allows you to find more product models?	Online	72.6%	63.3%
	Retail shops	12.9%	30.0%
	No difference	14.5%	6.7%

4.4.6 Effect of qualification level

The results obtained in the survey have been further analysed by level of qualification. According to Table 4.4.11, the distributions of postgraduate and undergraduate by gender are nearly the same.

Table 4.4.11: Distribution of postgraduate and undergraduate respondents by gender

	Postgraduate	Undergraduate
Male	67.6%	67.3%
Female	32.4%	32.7%

Table 4.4.12 shows that undergraduate respondents are more likely to buy online, but most respondents acquired their latest computers in retail shops.

Table 4.4.12: The percentage of postgraduate and undergraduate respondents who have bought products online before and how they acquired their latest computers

		Postgraduate	Undergraduate
Have you bought products online?	Yes	75.7%	84.3%
	No	24.3%	15.7%
How did you acquire your latest computer?	Online	22.9%	27.1%
	Retail shops	74.3%	64.6%
	Gifts	2.9%	8.3%

Table 4.4.13 shows that both postgraduate and undergraduate respondents prefer buying laptops and buying computers in New Zealand (the percentages are quite similar).

Table 4.4.13: The percentage of where postgraduate and undergraduate respondents bought their current computers and the type of computers

		Postgraduate	Undergraduate
Did you buy your current computer in New Zealand or overseas?	New Zealand	78.4%	80.8%
	Overseas	21.6%	19.2%
What type of computer did you buy?	Desktop	35.1%	37.3%
	laptop	64.9%	62.7%

Table 4.4.14 shows that postgraduate respondents are more likely than undergraduate respondents to buy computers for studying, gaming or chatting while undergraduate respondents are marginally more likely than postgraduate respondents to buy computers for other reasons.

**Table 4.4.14: Importance of the reasons why postgraduate and undergraduate respondents bought computers
(5 is most important and 1 is least important)**

	Postgraduate	Undergraduate
Studying	4.14	3.78
Gaming	2.88	2.61
Web surfing	3.86	3.86
Chatting	3.30	2.67
Others	3.05	3.19

According to Table 4.4.15, undergraduate respondents were more likely to think that online prices were cheaper and retail shopping was safer. Postgraduate respondents were more likely to think that they could get better service in retail shops.

Table 4.4.15: Distribution of postgraduate and undergraduate respondents' opinions of shopping's price, safety and quality of service for general products

		Postgraduate	Undergraduate
When buying a product, which method do you think is generally cheaper?	Online	48.3%	60.5%
	Retail shops	13.8%	4.7%
	No difference	37.9%	34.9%
When buying a product, which method do you think is generally safer?	Online	3.3%	2.3%
	Retail shops	63.3%	79.1%
	No difference	33.3%	18.6%
When buying a product, which method do you think generally offers better service?	Online	6.7%	11.1%
	Retail shops	70.0%	55.6%
	No difference	23.3%	33.3%

Table 4.4.16 shows that both postgraduate and undergraduate respondents preferred to buy electronics online most and clothes least.

Table 4.4.16: Popularity of various products which postgraduate and undergraduate respondents bought online (5 is the most often and 1 is the least often)

	Postgraduate	Undergraduate
Clothes	2.24	2.06
Household Goods	2.91	2.59
Electronics	3.85	3.46
Gifts	2.95	3.03
Other	2.93	3.15

According to Table 4.4.17, undergraduate respondents were more proficient in computer hardware technology than postgraduate respondents. Undergraduate respondents and postgraduate respondents were nearly equally likely to choose computers by themselves or with help from the staff in retail shops. Undergraduate respondents were more likely than postgraduate respondents to choose by searching on the web, while postgraduate respondents were more likely than undergraduate respondents to choose with friends.

Table 4.4.17: Percentage of postgraduate and undergraduate respondents' computer hardware technology level and how they chose computer models

		Postgraduate	Undergraduate
How proficient are you in computer hardware knowledge?	Very	40.5%	50.0%
	Quite	29.7%	30.8%
	A little	27.0%	15.4%
	Hardly	2.7%	3.8%
How did you choose the computer model?	By myself	60.0%	59.2%
	With friends	20.0%	12.2%
	With staff in the shop	5.7%	6.1%
	By searching on the web	14.3%	22.4%

According to Table 4.4.18, there are only small differences between the opinions of postgraduates and undergraduates, except in their perceptions of safety. Undergraduate respondents were more likely than postgraduate respondents to think that buying computers in retail shops was safer than buying online.

Table 4.4.18: Distribution of postgraduate and undergraduate respondents' opinions of shopping's price, safety and quality of service, efficiency and product range for computers

		Postgraduate	Undergraduate
When buying a computer, which method do you think is generally cheaper?	Online	45.9%	43.1%
	Retail shops	27.0%	23.5%
	No difference	27.0%	33.3%
When buying a computer, which method do you think is generally safer?	online	2.8%	1.9%
	Retail shops	66.7%	78.8%
	No difference	30.6%	19.2%
When buying a computer, which method do you think generally offers better service?	Online	5.6%	5.9%
	Retail shops	61.1%	58.8%
	No difference	33.3%	35.3%
When buying a computer, which method do you think generally allows you to find a suitable purchase most quickly and easily?	Online	51.4%	53.8%
	Retail shops	32.4%	32.7%
	No difference	16.2%	13.5%
When buying a computer, which method do you think allows you to find more product models?	Online	70.3%	69.2%
	Retail shops	18.9%	17.3%
	No difference	10.8%	13.5%

4.5 Summary

Both survey results and interview data are listed in this chapter. 92 students responded to the survey questions and nine of them agreed to be interviewed.

After the survey and interview results were presented, the data were analysed. In the data analysis, questions were grouped together: the questions about the trend of online shopping; the questions about effect of product category; the questions about effect of cost, safety, service, efficiency and convenience; the questions about effect of knowledge base. Information from the literature was used for comparison and differences by gender and by level of qualification were analysed.

After the data analysis some main points were identified, such as the number of respondents who choose online shopping is definitely increasing; the main factors which can affect the respondents' decisions on shopping online or in retail shops are price, efficiency, convenience, safety, gender, qualification level, product range and service; the respondents who prefer shopping in retail shops are concerned about safety of online shopping but prefer better service. The results also show that no matter whether they buy computers online or in retail shops they are satisfied with the method they chose.

5. Discussion

In this chapter the answers to the research questions are discussed.

1. What are the factors that influence decisions on whether to purchase computers online or at a physical store?

The factors which affect students shopping online are price, convenience, efficiency and product range. Of these factors, the most important is price. More than half of the Unitec respondents who had online shopping experience stated that online price for general products is cheaper than retail price. Also for computer products, 45.1% of respondents thought the online price is cheaper. Table 4.2.10 shows 53.8% of respondents agreed they could find suitable computers most quickly and easily online and 69.6% of respondents pointed out that they could find more computer models online.

There are three factors which affect students choosing shopping in retail shops which are safety, trust and service. Safety is an important factor which affects students choosing shopping in retail shops. 72% of Unitec respondents thought retail shopping is safer than online shopping. In the research by Horrigan (2008), more than 60% of people in US did not trust online shopping. In this research, 61.5% of Unitec respondents believed that they could get better service in retail shops when they bought any kind of products and 60.7% of Unitec respondents stated that they could get better service in retail shops when they purchased computers.

- a) Will variations of product influence relative variations in purchase decisions?

Yes. Table 4.2.5 shows that electronic products were most popular for Unitec respondents, clothes were least popular. However, Figure 4.4.3 shows that household goods were most popular for students in Mid-western American University (Levin, Levin, & Weller, 2005).

Jones (2003) said that some products are easy to keep, such as electronic products, books, travel tickets, DVDs and household goods. People would prefer to buy these kinds of products online. Some products such as fruits,

vegetables and foods are not popular online. People are concerned about the quality of these kinds of goods.

- b) What opinions do students express when comparing online purchasing with retail purchasing?

According to Table 4.4.2, 82.6% of Unitec respondents who bought computers online believed that buying computers online is efficient and 70.2% of respondents who bought computers in retail shops believed that buying computers in retail shops is efficient. 78.3% of respondents who bought computers online believed that buying computers online is convenient and 70.2% of respondents who bought computers in retail shops believed that buying computers in retail shops is convenient. 73.9% of respondents who bought computers online believed that buying computers online is safe and 66.7% of respondents who bought computers in retail shops believed that buying computers in retail shops is safe.

According to the results above, most respondents were satisfied with the ways which they choose to buy products, online or in retail shops. The interview results can explain this behaviour. Normally the respondents have already chosen the preferred way to buy products. If the respondents care about the price and have enough knowledge of the products which they want to buy, they may choose online shopping. If the respondents do not have enough information they may choose retail shops so they can ask for help from the shop staff.

- c) What are the pros and cons of purchasing online and of purchasing in a retail store?

According to Table 4.2.4, most Unitec respondents thought that they could buy something cheaper online and that shopping online was efficient and convenient. However, most Unitec respondents thought that they could get better service and shop more safely in retail shops.

d) What parameters affect students' choices as to how they buy computers?

The literature shows, some factors which affect the students' choices are price, safety and service. In interview results, four interviewees of nine stated that they chose online buying computers because of price. According to Table 4.2.10, 45.1% of Unitec respondents agreed that online price for computers was cheaper than retail price; 29.1% of Unitec respondents thought there was no difference between price online and in retail shops and 25.7% thought buying computers in retail shops was cheaper. One interviewee clearly stated that he did not prefer online shopping because of concerns about safety of online payment and only 2.2% of respondents believed online shopping is safe. 60.7% of respondents pointed out that they could get better service in retail shops and some interviewees agreed that they bought computers in retail shops because they can get better service in retail shops. This is in line with the literature.

In this research, another important parameter that is discussed is knowledge base. This factor is important as it affects the students' decisions when buying computers. The students with different levels of computer knowledge chose different ways to buy computers. According to Figure 4.4.7, the students with high computer technology knowledge would prefer to choose buying computers by themselves. The students with low computer hardware technology normally bought computers in retail shops because they could get help from staff in retail shops.

e) Which method will students predominantly choose to buy computer products in the future and why?

It is likely that online shopping will be the future shopping style. According to Figure 4.4.1, in each year from 2005 to 2008, 11% to 20% of Unitec respondents started online shopping. Figure 4.4.2 shows the number of Unitec students who bought computers online is increasing as well. Online shopping has its own advantages, such as cheap price, convenience and

efficiency. These advantages can attract more students to choose online buying computers and the trend supports this.

2. Are there any aspects of the results of this study that can be involved in future research?

The knowledge base is an aspect which can be studied in future research. According to the literature review, some factors have been deeply researched, such as price, efficiency, convenience, safety and trust. However this research shows that knowledge base is an important factor which can affect the students' decisions on how to buy computers. Figure 4.4.7 shows that students with different level of computer technology knowledge would choose different ways to buy computers.

So knowledge can be a focus for future research. The future research can be about how knowledge base affects people's online shopping behaviour and this kind of research can help the online shopping websites to improve their service to attract more customers.

3. How do the findings of this report compare with the findings of previous work?

Figures 4.4.4, 4.4.5, and 4.4.6 compared the data from Unitec in 2009 and America in 2007. 78% of American and 57.3% Unitec respondents think that shopping online is cheaper. 75% of American and 72% Unitec respondents think that shopping in retail shops is safer. 66% of American and 54% Unitec respondents think that shopping online is more efficient. The results show similarities between the data from Unitec and America. The differences might have occurred because of different sample sizes and timings.

6. Limitations

There are several limitations in my search. Firstly, this thesis is a 60 credits dissertation that is normally completed within one semester. For this time limit and also budget limit, the research was limited to 200 Unitec computing students (92 students answered the survey and 9 of them agreed to the interview). If there were a bigger sample size, the research result would be more accurate. For example, the sample could have been drawn from more tertiary institutions. Secondly, the target group in this research is Unitec computing students. Students in different majors may choose different ways to buy products because they have different knowledge bases. Normally computing students will be more familiar with computer technology. They do not need as much service from retail shops or information from friends so that they focus on price more than other factors. Finally, in this research computers were used as sample product. The research could be repeated for other products.

7. Conclusions

This dissertation used both quantitative and qualitative methods to collect and analyse the data for the factors that affect students' decision making of buying computers online or in retail shops. The collected information was used to discuss the behaviour and situation of the online shopping for students. A survey and interviews were conducted in this research.

By reviewing literature some factors which affect students' decision making on buying products online or in retail shops were initially defined. These factors include: price, convenience, efficiency, product range, service and safety. Most literature shows that online price is normally cheaper than retail price. Also online shopping makes the consumers' purchasing more convenient and efficient. People can search products online more quickly and they can find much wider product ranges than in retail shops. However there are still some disadvantages for online shopping. People can get better service in retail shops because staff in retail shops can give advice and help. Another weak-point for online shopping is safety. There are still lots of consumers who are afraid of the safety of online payment.

According the data which was collected in this research, there were some important findings below:

1. 39.2% of respondents started online shopping in 2004 or earlier and 11% to 20% of Unitec respondents started online shopping since then.
2. The most popular kind of products purchased online is electronic goods.
3. The results are similar for buying general products and for buying computers only. Most respondents thought that online prices were cheaper, buying in retail shops was safer and they could get better service in retail shops.
4. The data on price, safety and efficiency of online shopping which was collected in Unitec is similar to the data in the literature.

5. Most respondents were satisfied with the way which they chose to buy the computers, either online or in retail shops.
6. The data from undergraduate respondents and postgraduate respondents are quite similar.
7. More male respondents than females prefer online shopping because of higher knowledge base.

To sum up, online shopping has its own advantages, such as cheap price, wider product range and efficiency. These advantages make online shopping competitive in this digital generation. However, safety is still an important barrier for the developments of online shopping. A new and more secure technology for online payment is really needed, with more people choosing online shopping. With the online shopping becoming more and more mature, it will tend to be the main shopping style in the future.

Appendices

Appendix A: Questionnaire form

Please tick the box to answer the question

Part1: General Questions

1. Gender:

Male:

Female:

2. You are a:

Postgraduate student:

Undergraduate student:

Please specify your major: _____

Part2: Questions on buying products

3. Have you bought products online?

Yes:

No:

If yes, please go to question 4; if no, please go to Part3.

4. When did you buy your first product online?

2009:

2008:

2007:

2006:

2005:

2004 or earlier:

5. When buying a product, which method do you think is generally cheaper?

Online:

In retail shops:

Both equally:

Other (please specify): _____

6. When buying a product, which method do you think is generally safer?

Online: In retail shops: Both equally:

Other (please specify): _____

7. When buying a product, which method do you think generally offers better service?

Online: In retail shops: Both equally:

Other (please specify): _____

8. What kinds of products do you normally buy online?

Please rank these products from 1 to 5 in the boxes below, where 5 is the most often and 1 is the least often. If you have another product which you normally buy online, please write it in the space provided and include it in the ranking

Clothes	Household Goods	Electronics	Gifts	Others

If others (please specify): _____

Part3: Questions on buying computers

9. How did you acquire your latest computer?

Bought online: Bought in retail shop: Gift:

Other (please specify) _____

10. When did you buy your latest computer?

2009: 2008: 2007:
2006: 2005: 2004 or earlier:

11. Was your latest computer purchased:

Brand new: Second Hand:

Other (please specify) _____

12. How much was the purchase price of this computer?

Above \$3000 \$2000--\$2999 \$1000--\$1999
\$500--\$999 under \$500 Don't know:

13. Did you buy your current computer in New Zealand or overseas?

New Zealand: Overseas:

14. What type of computer did you buy?

Desktop: laptop:

Other (please specify): _____

15. The following are some common reasons for buying a computer.

Please rank these reasons from 1 to 5 in the boxes below, where 5 is the most important and 1 is the least important. If you have another key reason for buying a computer, please write it in the space provided and include it in the ranking

Studying	Gaming	Web Surfing	Chatting	Others

If others (please specify): _____

16. How proficient are you in computer hardware knowledge?

Very: Quite: A little: Hardly:

17. How did you choose the computer model?

By myself: With friends:

With staff in the shop: By searching on the web:

Other (please specify): _____

18. When buying a computer, which method do you think is generally cheaper?

Online: In retail shops: Both equally:

Other (please specify): _____

19. When buying a computer, which method do you think is generally safer?

Online: In retail shops: Both equally:

Other (please specify): _____

20. When buying a computer, which method do you think generally offers better service?

Online: In retail shops: Both equally:

Other (please specify): _____

21. When buying a computer, which methods do you think generally allows you to find a suitable purchase most quickly and easily?

Online: In retail shops: Both equally:

Other (please specify): _____

22. When buying a computer, which method do you think allows you to find more product models?

Online: In retail shops: Both equally:

Other (please specify): _____

23. Whether you bought a computer online or in retail shop, how did you feel about the process after purchasing? (You can tick more than one choice)

Efficient: Convenient: Safe:

Inefficient: Inconvenient: Unsafe:

Or other (please specify): _____

24. Would you be willing to be interviewed in order to provide more information?

The interview will take about 15 minutes.

Yes: No:

If yes, please e-mail me at lip15@studentmail.unitec.ac.nz

Appendix B: Interview questions

Part 1: Interview Questions for Buying Online

1. Why did you choose to buy a computer online?
2. What kind of websites do you use to influence your decision?
3. How do you feel about buying a computer online?
4. Do you think buying a computer online is the best method or not? Why?
5. Did you encounter some problems when buying a computer online? If yes, please describe briefly.
6. Will you keep shopping for computers online or not? Why?
7. Will you try to buy your next computer in a retail shop? Why?

Part 2: Interview Questions for Buying in Retail Shops

1. Why did you choose to buy a computer in a retail shop?
2. What kind of retail shops do you use to buy computers?
3. How do you feel about buying a computer in a retail shop?
4. Do you think buying a computer in a retail shop is the best method or not? Why?
5. Did you encounter some problems when buying a computer in a retail shop? If yes, please describe briefly.
6. Will you keep shopping for computers in retail shops or not? Why?
7. Will you try to buy your next computer online? Why?

Part 3: Interview Questions for Buying in Both Ways

1. Why did you choose to buy a computer online or in a retail shop?
2. What kind of retail shops or websites do you use to buy computers?
3. How do you feel about buying computers online and in retail shop?
4. Which method do you think is better for buying computers: online or retail?
Why?
5. Did you encounter some problems when buying a computer online or in a retail shop? If yes, please describe briefly.
6. Which method will you choose to buy your next computer in the future? Why?

Appendix C: Information sheet

Information for participants

Factors that affect students' decision making on buying computers: online or in retail shops

My name is Peng Li and I am a Master of Computing student at Unitec. Part of my degree programme involves a research paper on a subject of my choice. My research topic looks at how students buy computers. By taking part in this research project you will be helping me to understand the reason why you choose to buy online or in traditional store.

What it will mean for you

I want to interview you and talk about:

- Why do you choose to buy online or in a retail store?
- How do you feel about buying online or in a retail store?
- What are the (dis)advantages when buying online or in a retail store?
- Which way will you predominantly choose to buy computer(s) in the future and why?

I would like it if you could meet me at a time and place that suit you for about 30 minutes to talk about these kinds of things. I will record the interview and will be transcribing it (typing the conversation out) later. All features that could identify you will be removed and the recording will be erased once the transcription is done.

If you agree to participate, you will be asked to sign a consent form. This does not stop you from changing your mind if you wish to withdraw from the project. However, because of our schedule, any withdrawals must be done within 2 weeks after the interview.

Your name and any information that may identify you will be kept completely confidential. All information collected from you will be stored on a password protected file and only you, the researcher and my supervisors will have access to this information.

Please contact me (lip15@studentmail.unitec.ac.nz) if you need more information about the project. At any time if you have any concerns about the research project you can contact my supervisor: Samad Kolahi, phone 815 4321 ext. 6026 or email skolahi@unitec.ac.nz

UREC REGISTRATION NUMBER: (insert number here)

This study has been approved by the UNITEC Research Ethics Committee from (date) to (date). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix D: Consent form

Participant consent form

Factors that affect students' decision making on buying computers: online or in retail shops

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that I don't have to be part of this if I don't want to and I may withdraw at any time within 2 weeks after the interview.

I understand that everything I say is confidential and none of the information I give will identify me and that the only persons who will know what I have said will be the researcher and his supervisor. I also understand that all the information that I give will be stored securely on a computer at Unitec for a period of 5 years.

I understand that my discussion with the researcher will be recorded and transcribed.

I understand that I can see the finished research document.

I have had time to consider everything and I give my consent to be a part of this project.

Participant Signature: *Date:*

Project Researcher: *Date:*

UREC REGISTRATION NUMBER: (insert number here)

This study has been approved by the UNITEC Research Ethics Committee from (date) to (date). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 6162). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

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