

**Culture, Trust and Security – An Empirical Study of  
Consumer Attitudes towards B2C E-Commerce in  
Chinese Societies**

A thesis submitted for the degree of Doctor of Philosophy

BY

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## ABSTRACT

E-commerce is becoming increasingly attractive to businesses. Compared to the US and Europe, E-commerce remains in an embryonic state in China. E-commerce in China is forecast to grow more than two-fold during the next two years, according to government estimates. China has been rapidly building up its IT and telecommunications infrastructure for e-commerce applications. The potential of e-commerce to bring new markets to Chinese companies, improve market information and transparency of pricing, and enhance distribution of goods and services is widely acknowledged.

E-commerce has become a hot topic of discussion and investigation among business and marketing researchers. However, most of literature is dominated by empirical studies in the developed countries of European and US. Less attention has been given to the developing countries in the Far East, especially in China. The literature has generally proposed that the culture and trust issue are likely to be important factors affecting the development of e-commerce. This study aims to study this proposition in the context of Chinese culture with a view to filling a gap in the e-commerce literature.

To achieve the objectives of this study, questionnaire survey will be the main research method for quantitative approach and it had been widely used in social science and business research. An online questionnaire was published on the online survey web site and distributed to several online stores web site, newsgroups, and online forums. The study also proposes a conceptual framework of factors affecting Internet users' purchase intention in Great China Region, including online trust, security issues, cultural influence, and perception of risk. Using actual data, researchers can empirically test relationships among the factors within this framework and identify possible future research areas for each factor.

The quantitative questionnaire survey was conducted and results indicated that online trust and security issues will impact significantly on the customer behaviour and encouraging other Internet users to use e-commerce in Great China Region. Interestingly, even though the perception of risk is high, consumers may decide to take part in e-commerce. The study reveals that Internet users tend to make a proactive effort to adopt e-commerce and similar results were obtained across three regions.

## **Dedication**

*To my dear father*

*In memory*

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## TABLE OF CONTENTS

<b>Abstract</b>	<b>ii</b>
<b>Dedication</b>	<b>iii</b>
<b>Acknowledgements</b>	<b>iv</b>
<b>Table of Contents</b>	<b>v</b>
<b>List of Tables</b>	<b>ix</b>
<b>List of Figures</b>	<b>xiii</b>
<b>List of Acronyms</b>	<b>xiv</b>
<b>Chapter One Research Background</b>	<b>1</b>
1.1 Introduction	1
1.2 Application and Implementation of E-Commerce	2
1.3 E-commerce in China	5
1.4 Research Motivations	11
1.5 Research Objectives	18
1.6 Research Methods	20
1.61 Sample Selection	20
1.7 Research Structure	23
<b>Chapter Two E-commerce Development in Great China Region</b>	<b>25</b>
2.1 Introduction	25
2.2 People's Republic of China	27
2.21 E-Commerce Development in People's Republic of China	27
2.22 Internet User in China	33

2.3 The Internet Economy in Taiwan	39
2.4 The Internet Economy in Hong Kong	45
2.5 Summary	48
<b>Chapter Three Literature Review</b>	<b>49</b>
3.1 Introduction	49
3.2 E-commerce	50
3.3 Internet Security	55
3.4 Online Trust	58
3.5 Cultural Influence	66
3.6 Chinese Cultural Influence	77
3.7 Other factors	85
3.8 Research Model	86
3.81 Measurement of the Variables	89
3.9 Summary	91
<b>Chapter Four Research Methodology</b>	<b>93</b>
4.1 Introduction	93
4.2 Research Methodology	94
4.3 Quantitative Research Method	96
4.4 Validity of the Research	98
4.5 Data Collection Process	101
4.6 Question Construction	106
4.61 User Profile	108
4.62 Purchase Attitude	109

4.63 Four Factors	109
4.64 Outcomes	110
4.7 Pilot Test Study	111
4.8 Sample selection	115
4.9 Data Analysis	123
4.9.1 Cleaning the Data	123
4.9.2 Statistical Data Analysis	124
4.9.3 Use of Non Parametric Statistical Tests	126
4.10 Summary	128
<b>Chapter Five Analysis of Results I</b>	129
5.1 Introduction	129
5.2 Sample Size and Response Rate	130
5.3 Descriptive Statistics Analysis	143
5.3.1 Online Trust	143
5.3.2 Online Security	148
5.3.3 Cultural Influence	151
5.3.4 Purchase Intention	155
5.3.5 Risk Perception	158
5.4 ANOVA	162
5.5 Summary	166
<b>Chapter Six Analysis of Results II and Discussion</b>	168
6.1 Introduction	168
6.2 Structural Equation Modelling	169

6.3 Hypotheses Testing	171
6.31 Correlation	181
6.4 Discussion	183
6.41 Online Trust	183
6.42 Security	185
6.43 Risk	187
6.44 Culture	188
6.441 Touch and Feel	192
6.442 Debt is Not Good	194
6.45 Other Factors Influence	195
6.5 Summary	196
<b>Chapter Seven Conclusions, Limitations and Further Research</b>	198
7.1 Introduction	198
7.2 Fulfilment of Research Objectives	199
7.3 Summary of Prominent Findings	205
7.4 Limitation of the Study	209
7.5 Contribution and Future research	211
<b>Bibliography</b>	215
<b>Appendices</b>	239
Appendix I	239
Appendix II	265
Appendix III	303



## LIST OF TABLES

Table 1.1	Relevant Literature on Security and Trust Issue on E-Commerce	16
Table 3.1	Element of Traditional Commerce	52
Table 3.2	Hofstede's cultural values of China, Hong-Kong, and Taiwan	78
Table 5.1	Part A: Questionnaire Response	131
Table 5.1	Part B: Total Usable Response Between Male and Female	131
Table 5.1	Part C: Male Response	131
Table 5.1	Part D: Female Response	131
Table 5.2	Part A: Respondents' Academic Background	134
Table 5.2	Part B: Respondents' Age	134
Table 5.2	Part C: Respondents' Occupation	135
Table 5.3	Part A: Respondents' Internet Experience	136
Table 5.3	Part B: Respondents' Average Online Hour	137
Table 5.3	Part C: Place Access to Internet	137
Table 5.4	Part A: Respondents' Online Purchase Frequency	138
Table 5.4	Part B: First Time to purchase via Internet	138
Table 5.4	Part C: Latest Purchase from Internet	139
Table 5.4	Part D: Respondents' e-Banking Usage	139
Table 5.4	Part E: Type of product purchased via Internet	139
Table 5.5	Part A: Respondents' satisfaction of Online Purchase	141
Table 5.5	Part B: Respondents' possibility of Online Purchase	141
Table 5.5	Part C: Recommendation of Online Purchasing	142
Table 5.5	Part D: Time spent on Online Purchase	142
Table 5.5	Part E: Reason of Online Purchase	142

Table 5.6	Part A: “I have faith in humanity”	145
Table 5.6	Part B: “More than 50 per cent of online vendors provide correct information about the items that I want to purchase”	145
Table 5.6	Part C: “More than 50 per cent of online vendors provide useful and sufficient information”	146
Table 5.6	Part D: “More than 50 per cent of online vendors keep promises and commitments”	146
Table 5.6	Part E: “More than 50 per cent of online vendors’ services meet my expectations”	147
Table 5.7	Part A: “More than 50 per cent of online vendors implement security measures to protect Internet shoppers”	149
Table 5.7	Part B: “More than 50 per cent of online vendors usually ensure that transactional information is protected from accidentally being altered or destroyed during a transmission”	149
Table 5.7	Part C: “More than 50 per cent of online vendors provide sufficient information when I try to make a transaction”	150
Table 5.7	Part D: “I feel safe to use my credit card to purchase online in most cases”	150
Table 5.7	Part E: “It is important to me that the online vendor has multiple third party certifications”	151
Table 5.8	Part A: “I would take my friend’s / family’s advice whether I should purchase online”	152
Table 5.8	Part B: “I would take advice from members of the virtual community whether I should online purchasing”	153

Table 5.8	Part C: “It is important to me that a person/ friend recommend a website to me before I purchase online”	153
Table 5.8	Part D: “For goods, checking the physical condition of similar products is necessary before I purchase online”	154
Table 5.9	Part A: “I can save money by online purchase”	156
Table 5.9	Part B: “I can save time by online purchase”	156
Table 5.9	Part C: “Online purchase increases my productivity in shopping”	157
Table 5.9	Part D: “I am likely to purchase online within a month”	157
Table 5.9	Part E: “I intend to continue purchasing online rather than use other alternative”	157
Table 5.10	Part A: “Purchasing from Internet would involve more product risk when comparing with traditional ways of shopping”	159
Table 5.10	Part B: “Purchasing from Internet would involve more financial risk comparing with traditional ways of shopping”	159
Table 5.10	Part C: “How well does the online vendor fit your personal requirements/needs”	160
Table 5.10	Part D: “What is the likelihood of getting a good bargain by purchase online”	160
Table 5.10	Part E: “How much risk would you tolerate when deciding to make a purchase online”	161
Table 5.11	Analysis of Variance	163
Table 6.1	Multiple Regression of Culture items on Purchase Intention	174
Table 6.2	Multiple Regression of Security items on Purchase Intention	176

Table 6.3	Multiple Regression of Culture items on Online trust	178
Table 6.4	Multiple Regression of Risk items on Purchase Intention	180
Table 6.5	Correlations between Online Trust and Online Security (0.321)	182

## LIST OF FIGURES

Figure 2.1	Map of Great China Region	26
Figure 2.2	Statistical survey on the Internet development in China	34
Figure 2.3	Map of Taiwan	40
Figure 2.4	Map of Hong Kong	45
Figure 3.1	Ribbink et al. (2004) Conceptual Model	65
Figure 3.2	Teo and Liu's Research Model	76
Figure 3.3	Research Conceptual Model	87
Figure 6.1	Research Model with Hypotheses	172
Figure 7.1	Research Model with Result	206

## LIST OF ACRONYMS

<b>APEC</b>	Asia-Pacific Economic Cooperation
<b>B2B</b>	Business-to-Business
<b>B2C</b>	Business-to-Consumer
<b>C2C</b>	Consumer-to-Consumer
<b>CFA</b>	Confirmatory Factor Analysis
<b>CIECC</b>	China International Electronic Commerce Centre
<b>CNNIC</b>	China Internet Network Information Centre
<b>CRITO</b>	Center for Research on Information Technology and Organisation
<b>CSD</b>	Census and Statistics Department
<b>EDI</b>	Electronic Data Interchange
<b>FIND</b>	Focus on Internet News and Data
<b>GCR</b>	Global Competitiveness Ranking
<b>G.C.R.</b>	Great China Region
<b>ICT</b>	Information and Communication Technology
<b>IDV–COL</b>	Individualism– Collectivism
<b>ISP</b>	Internet service provider
<b>IT</b>	Information Technology
<b>LTO</b>	Long Term Orientation
<b>MAS–FEM</b>	Masculinity–Femininity
<b>MOFTEC</b>	The Ministry of Foreign Trade and Economic Co-operation
<b>NIE</b>	New Industrializing Economy
<b>NRI</b>	Network Readiness Index
<b>PBoC</b>	People’s Bank of China
<b>PDI</b>	Power Distance

<b>PRC</b>	People's Republic of China
<b>ROC</b>	Regional Operations Centre
<b>SAR</b>	Special Administration Region
<b>SEM</b>	Structural Equation Modelling
<b>SET</b>	Secure Electronic Transaction
<b>SME</b>	Small and Medium-sized Enterprise
<b>SPSS</b>	Statistical Package for Social Science
<b>TAM</b>	Technology Acceptance Model
<b>UAI</b>	Uncertainty Avoidance
<b>UNCTAD</b>	United Nations Conference on Trade and Development
<b>WTO</b>	World Trade Organisation
<b>WWW</b>	World Wide Web

## **CHAPTER 1**

### **RESEARCH BACKGROUND**

#### **1.1 Introduction**

During the past decade, with the emergence of e-commerce and internet technologies, organisations have changed the way in which they conduct their business. E-commerce promotes open communication and a virtual interactive environment in which suppliers and customers can exchange information and products. The internet represents a technological innovation that has transformed the way in that we live and work.

In this chapter, the researcher will introduce the general application and implementation of E-commerce, E-commerce in China together with the objectives and methodology of this research. This chapter also provides an introduction of the PhD project and consists of four parts, including the research objectives, research background, a general outline of the research method, and the structure of the thesis.



## **1.2 Application and Implementation of E-Commerce**

E-commerce fundamentally focuses on the electronic exchange of information using information and telecommunication infrastructures (particularly the World Wide Web and the Internet). Broadly defined, electronic commerce can be viewed as “applies equally well in dot-com and Internet-only business setting, as well as more traditional business settings where the new channel of the Internet is be used alongside existing channels.” (Kauffman and Walden, 2001 p.3). E-commerce encompasses a wide range of commercial activities that can be categorised into business-to-consumers and business-to-business sectors.

E-commerce promotes open communication and a virtual interactive environment in which suppliers and customers can exchange information and products. E-commerce improves communication among partners along a value chain and offers an integrated business model by which companies can be responsive and flexible to changing market and customer requirements.

The use of the e-commerce, by both organisations and individual consumers continues to grow. Telecommunication organisations and governments are making huge investments in developing the network infrastructure, and many programmes have been developed to enable the exchange of e-communication, databases, and commercial transactions via the world wide web (WWW) (Tan and Teo, 1998).

Applegate et al. (1996) discussed the implication of e-commerce on organisational performance and research agenda. E-commerce involves more than just buying and selling and encompasses the range of pre-sale efforts. As well as a host of ancillary

activities, these include new approaches to market research, generation of qualified sales leads, advertising, product purchasing and distribution, customer support, recruiting, public relations, business operation, product management, knowledge distribution and financial transaction.

According to comScore Networks survey, consumers in the United States spent US\$24 billion online in 2006. Furthermore, e-commerce, despite many obstacles facing the practice, has taken off. It is projected that global Internet sales will exceed \$12.8 trillion in 2006 (FIND, 2009). It was projected that more than half of all the Internet users would purchase online by the end of 2010 (Hoblby, 2001; Kolsaker & Paynes, 2002) and this will lead e-commerce, the sale of products and services via Internet to a new era. The US Census Bureau reports that consumers in the United States alone spent US\$164 billion online in 2008.

There is no doubt that advent of the e-commerce has brought important implications to both business organisation and individual consumers. Teo and Liu (2007) demonstrated that the reasons for internet adopters creating web sites were: convenient access to worldwide information, establishing a global presence, extending global market reach, creating new business opportunities, improving customer service, direct selling of products and lowering of operational costs.

For consumers, the new medium provides enormous potential benefits, such as wide range of product and services choice, bargain prices, detail information, shopping convenience and even shopping enjoyment. For most business organisations the e-commerce is an excellent alternative distribution channel that not only is cost effective but also can reach consumers directly and extensively. Moreover, the

e-commerce seems to provide a great competitive opportunity for all those who want to enter the business world, such as the low costs of entering consumer markets can reduce the advantage of scale of large companies (Watson *et al*, 1998; Gefen and Heart, 2006). This has become part of daily life, and it is difficult to imagine an organisation without some form of e-commerce application.

E-commerce is becoming increasingly attractive to businesses. Compared to the US and Europe, E-commerce remains in an embryonic state in China because of the difference in traditional business models, conventional consumer behaviours and consumer expectations. E-commerce in China is forecast to grow more than two-fold during the next two years, according to government estimates. In 2009, business on the web had reach a volume of 119.5 billion RMB, and the country's internet regulator, the Ministry of Information Industry, says that by end of 2010 it will top 250 billion RMB.<sup>1</sup>

The impetus behind China's Internet drive can be attributed in part to government efforts to prepare for position the country for the 'new economy', in part to local entrepreneurs hoping to ride the venture-capital wave to fame and fortune. Today an increasing number of Chinese people and organisations use the Internet for varying purposes. Thus understanding the relations between culture factor and security of e-commerce in China is essential.

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<sup>1</sup> Online Market report in China. Available from: [http://market.ccidnet.com/pub/report/show\\_8380.html](http://market.ccidnet.com/pub/report/show_8380.html) [Accessed 17 July 2009].

### **1.3 E-commerce in China**

China has been rapidly building up its IT and telecommunications infrastructure for e-commerce applications. The potential of e-commerce to bring new markets to Chinese companies, improve market information and transparency of pricing, and enhance distribution of goods and services is widely acknowledged (Trappey & Trappey, 2001).

The adoption of economic reforms and an “open door” policy in China resulted in substantial economic growth within the Chinese population of 1.3 billion. China has been rapidly building up its IT and telecommunications infrastructure for e-commerce applications since the late 1980s (Gunasekaran, et al., 2004, Mueller & Tan, 1997).

Internet business primarily means to reach out to foreign companies and as a means for conducting business-to-business (B2B) or business-to-consumer (B2C) commerce. Businesses and consumers are using the Internet to a large extent for e-mail, search machine, advertisements, homepages, electronic trade fair advertisement, and business document exchange and document transmittal (Trappey & Trappey, 2001).

The former Information Office of the State Council appointed China Internet Network Information Centre (CNNIC) to collect information on the Chinese Internet market in order to help government and commercial enterprises with their decision making since 1997 (CNNIC, 2009). The information included the number of host computers, Internet users, the distribution of users, information traffic and the registration of domain names. The first survey was undertaken in October 1997. After the first survey was completed, the surveys began to be conducted twice a year, every January

and July. Those survey reports have been regarded as the leading authority on China's Internet statistics (CNNIC, 2009).

CNNIC semi-annual survey reports collect a significant amount of information about the Internet development in China. The survey reports provide valuable information on the overall Internet development in China, regional distribution, Internet users' behaviour, preference, and their opinions on Internet services and existing e-commerce services.

China's infrastructure for e-commerce diffusion is characterised by 'disparities' among geographic areas, demographics, industrial fields, and firm size. Large cities and economically advanced coastal provinces enjoy much better infrastructure. Certain industries including banking and insurance are information intensive and better positioned to adopt any information-related activities (Tan and Ouyang, 2004). Large enterprises have bigger IT budgets and better-trained staffs than small and medium-sized enterprises. Internet and e-commerce are better adopted among younger generations with higher education (CNNIC, 2009). The infrastructure disparity leads to e-commerce diffusion disparity in China. Current e-commerce activities in China are concentrated in large cities, coastal provinces, certain industries, large enterprises, and among well-educated young people (Zhu, 2003).

More and more organisations in China are using the Internet to access and retrieve information, disseminate knowledge, and provide online services to improve the organisation's efficiency, effectiveness and productivity.

Findings in CNNIC surveys have significant implications for companies that are considering conducting B2C e-commerce in China. The B2C market is not likely to gain a dramatic rise in the next few years based on the CNNIC (2009) surveys. The traditional retail model will still dominate the consumer market in China. However, as the number of Internet user increases, companies can leverage Internet resources with its traditional businesses. Out of 17,833 Internet users surveyed in July 2009, 26% of the respondents reported they had some purchasing experiences over the last 12 months compared to only 24.8% in a similar survey in 2008 (CNNIC, 2009).

The largest impact of business-to-business e-commerce is likely to be on small and medium-sized enterprises (SMEs), because many large businesses already have Electronic Data Interchange (EDI) systems in place. The accessibility of the Internet makes electronic commerce a realistic possibility for SMEs and is likely to lead to its widespread diffusion (Mueller & Tan, 1997).

Many Chinese firms fall behind in conducting actual e-commerce transactions, mostly because barriers in business, legal and cultural perspectives fail to accommodate the technology progress. The lack of the solid historic foundation of deploying and utilising internal information systems and the poor integration of business process with information systems may slow down technology progress. There are many other non-technical barriers to e-commerce diffusion in China. The most significant barriers include the lack of security, lack of a system to monitor and guarantee buyer and seller credibility, and an inefficient delivery system (Furnell & Karweni, 1999; Kim *et al.*, 2008; Lian and Lin, 2008). In addition, there is not a sophisticated legal framework to facilitate e-commerce activities and to protect the interests of both vendors and consumers (Gunasekaran & Nagi, 2005).

China needs to have a basic platform to embrace e-commerce. China is currently rapidly developing the infrastructure necessary for e-commerce. China's transition from a plan-based economy to a more market-driven one designates the country as an emerging market in the global economic system, one that requires keeping pace with digital advances. Government and private efforts are working toward overcoming the lack of infrastructure. The business-to-business market is expected to expand once a number of telecommunications infrastructure issues are resolved (Mueller & Tan, 1997).

The Chinese government has begun to see the value of e-commerce and has established several sites itself such as The Ministry of Foreign Trade and Economic Co-operation's (MOFTEC), China products site at Chinamarket.com. MOFTEC runs China International Electronic Commerce Centre (CIECC). CIECC was created in February 1996 to research, promote and operate China's international e-commerce (Access Asia, 2001).

There are now a growing number of e-commerce projects including the People's Bank of China (PBoC) and its E-mall project, an on-line electronic retailing mall which has advanced security to protect consumer's credit card numbers and uses a Secure Electronic Transaction (SET) system.

Beijing has come to identify E-commerce as a central plank of growth for both SMEs and private companies. E-commerce is part of the government's overall hi-technology strategy that is centred on certain areas of the country (primarily Beijing and

Shanghai) but is expected to radiate outwards in the next century (Trappey & Trappey, 2001).

To improve e-commerce in China, business and enterprise will need to solve out the basic problem that they used to have, such as lack of basic automation in place, poor management skill, and lack of e-commerce integration (Tan and Ouyang, 2004). Effective strategies towards the adoption of e-commerce need to be based on a good understanding of the costs and benefits of using new Information Technologies (IT) (Salman, 2004). Developing and implementing appropriate e-commerce strategies will be important for maintaining competitiveness (Daniel & Wilson, 2002).

A healthy e-commerce infrastructure should be supported both by advanced technologies and by a friendly business, legal and cultural environment. On the other hand, the impressive annual growth rates of B2B and B2C transactions had been show in recent years. As the positive forecasts, are pointing to the fact that China is making progress and gradually working on its business, legal and cultural barriers while keep upgrading its technology infrastructure (Salman, 2004). It remains to be seen how fast these barriers could be alleviated or even removed.

Based on the literature analysis, Wong *et al.* (2004) found that local economic development, Internet user behaviour and traditional business are the factors that influenced the development of e-commerce in China. However, this study did not include primary data collection, therefore further research could be considered in future study.



Government policies regarding e-commerce diffusion should be geared toward passing various laws and regulations to create a legal and safe environment for businesses and consumers. The government could also help, possibly through its state-owned enterprises, to build up financial, certifying, security, and even delivery systems to serve e-commerce transactions (Tan and Ouyang, 2003). For example, Chan and Al-Hawamdeh (2002) reviewed the development of e-commerce in Singapore and studied the impact on development of information society in Singapore. This study found that government can provided great environment and infrastructure to encourage local and foreign companies for e-commerce adoption.

## 1.4 Research Motivations

E-commerce has become a hot topic of discussion and investigation among business and marketing researchers. However, most of literature is dominated by empirical studies in the developed countries of European and US. Less attention has been given to the developing countries in Asia. There are some studies for Korea and Japan (Sung, 2006; Hu et al., 2004).

The argument in favour of moving to e-commerce is a belief that electronic markets have the potential to be more efficient in developing new information-based goods and services, and in finding global customers and trading partners with whom to conduct business. E-commerce, via the internet or the next generation of internet protocol, will change business institution, operations, and products and services, as we know them today, just as the telephone, television, fax, and email have changed the way businesses and consumers communicate.

E-commerce brings the benefits of product promotion, cost savings, timely information, shortened remittance time, information consistency, better customer services, and better customer relationship, customisation of products, competitive advantages, and convenience of doing business (Wen *et al*, 2001). For example, Daniel and Wilson (2002) conducted a mail questionnaire survey to investigate the reasons that causing SME to adopts e-commerce and benefits they are realising from e-commerce developments. By analysing the data collected from 5,000 companies across wide range of industry sectors throughout the UK, the study proved that the competitive pressure is the main driver of e-commerce adoption for UK SMEs. Information sharing and communication between employees within the firm were

found to be the benefits of adopting e-commerce.

However, despite the phenomenal growth and the tremendous potential for future growth in e-commerce, consumers have encountered problems and difficulty when they purchasing online. Although US Census Bureau report that the absolute figure of e-commerce revenue look large in 2002 and it only accounts for 1.3 percent of all retail sales. It also represents a slow increase from 1999 and did not change much at all since 2001 (Woods, 2003). Many online users are still reluctant to purchase from Internet, which has resulted mainly from the fact that these online users have doubts and concerns about purchasing from Internet (Park and Kim, 2006). Their doubts and concerns have brought heightened attention from both practitioners and academics and resulted in numerous discussions. System security and information privacy is one of the consumers' major concerns. According to CNNIC Report (2009), 195 million Internet users were attacked by viruses and Trojan horses (spy software) online within six months, and the accounts or passwords of 110 million were stolen. The potential security hazards of the Internet has degraded Internet users' trust in the Internet, and only 29.2% of Internet users believed online transactions to be safe, thus restricting the development of transaction applications like e-commerce and online payment (CNNIC, 2009).

The important reason is trust. Various studies demonstrate that in the business-to-consumer environment, a lack of trust is a main reason that inhibits online users purchasing from Internet. As reported in Beauprez's survey (2002), only 29 percent of Internet users say they believed the information provided on websites that sell products or services. Most consumers refuse to provide personal information to websites (Hoffman *et al.*, 1999). To increase the use of e-commerce, trust issue must

be improved and considered seriously.

E-commerce provides a rich field for academic research. Studies have included: technology platforms (Hakwins *et al*, 2000); business challenges (Daniel & Wilson, 2002); infrastructure development (Chan and Al-Hawamdeh, 2002); emergent organisational forms (Gunasekaran and Ngai, 2005); and social and macro-economic impacts (Salman, 2004), security (Furnell and Karweni, 1999) and trust (Monsuwe *et al.*, 2004).

The issue of trust is not a new topic. Since 1950s, trust has been the subject of studies in social psychology, sociology, philosophy, political science, management, marketing, communication, computer science and information systems. The key role of trust in any relationship is commonly recognised across disciplines. The deployment of the e-commerce in business world has add new dimensions to consumer trust and this reflected in the increasing number of publications in the past few years addressing consumer trust in e-commerce. These studies have covered many aspects of consumer trust and significantly increased understanding of this concept. However, cultural impact on consumer trust is still an open issue for many researchers to explore.

Based on a survey of small firms in Hong Kong in which factors affecting the adoption of electronic data interchange (EDI) were examined, Kuan and Chau (2001) have proposed a perception-based model that incorporates the elements of technology, organisation and environment. However, this study was mainly focused on small businesses in Hong Kong and did not provide an overall perception of the issues involved in the implementation of e-commerce in a country.

Other studies have investigated whether social issues have influence the development of e-commerce. Thus, Gunasekaran and Ngai (2005) developed a framework for:

- identifying the reasons for using e-commerce
- understanding the implications of e-commerce in companies
- implementing and applying e-commerce successfully for improved organisational competitiveness and success

The study also provided critical findings through empirical analysis and structured questionnaire in Hong Kong. The major factors that influence the application and implementation of e-commerce are: perceived usefulness of web; perceived barriers of the Internet for e-commerce; usage of the Internet and perceived benefits of Internet for e-commerce (Gunasekaran and Ngai, 2005). This finding provided a guideline for improving the application and implementation of e-commerce in Hong Kong industries (Gunasekaran and Ngai, 2005).

In social and macro-economic aspects, Salman (2004) reported that the developing countries need to improve overall environment for e-commerce development. The author found that human condition, political aspects and environmental issues are serious factors for e-commerce development. However, this study is based on empirical analysis and literature review which leave place for further research to carry on for this subject.

There are limited researches available to address the perceived benefits, potential barriers to e-commerce implementation in China, and effects and influences on

consumers' attitude toward online shopping.

Based on most research, two exogenous factors which influence consumers' attitude toward online shopping have been proposed in the literature include previous online shopping experiences (Shim *et al.*, 2001; Easlick and Lotz, 1999), trust and security in online shopping (Yoon, 2002; Lee and Turban, 2001).

Satisfaction with product offerings has been found to be a primary driver of overall customer satisfaction (Flavian *et al.*, 2006). Quality of customer service (financial statements and IT-enabled services) is also important but of varying impact across different customer categories (Ribbink *et al.*, 2004). Functionality had the largest impact on satisfaction with quality of automated service delivery—"Customers seem to be receptive to the potential benefits offered by an electronic system, such as speed and convenience, provided it addressed all their trading needs and was easy to use" (Krishnan *et al.*, 1999). One danger in generalising from previous studies (e.g. Roth and Jackson 1995) is that product and services are not homogeneous.

Childers and Carson (2001) found that if consumers enjoy their online shopping experience, they have a more positive attitude toward online shopping, and more likely to adopt the Internet as a shopping medium. From Burke's (2002) research, consumers with higher education level are more comfortable using online shopping. This is because learning to shop via Internet requires basic knowledge of using computer.

From different aspects, Furnell & Karweni (1999), Hakins *et al.* (2000) and Tan & Ouyang (2004) identified that security is one of the major factors to influence the

development of e-commerce. Some of arising issues (security and trust) of e-commerce is summarised in Table 1.1, including the authors, the methodologies, their findings and the limitation of the study.

**Table 1.1: Relevant Literature on Security and Trust Issue on E-Commerce**

<b>Study</b>	<b>Method</b>	<b>Finding</b>	<b>Limitation</b>
Furnell and Karweni (1999)	Questionnaire Surveys in UK	Better security will increase consumer confidence	Lack of quantitative evidence. The respond rate is low.
Hawkins, S. <i>et al.</i> (2000)	Literature analysis	Identify several methods to prevent Internet security breach	This study is based on an empirical analysis
Monsuwe, T. <i>et al.</i> (2004)	Literature review with empirical study	Trust issue is one of the major reasons influence consumers willingness to shop online	The result of literature review has not been tested in real world case.
Tan and Ouyang (2004)	Surveys in 10 countries and focus on China	Privacy of data and security are seriously concern from Chinese firms	The study does not consider the comparison with other countries

Security and trust have new implications that need to be re-addressed and thought about as they apply to e-commerce. However, the literature information on security

and trust in e-commerce are still limited compare to previous literature on e-commerce. Previous e-commerce studies in China are either too descriptive (e.g. Tan *et al.*, 2007) or lack of a theoretical framework to explain the result (e.g. Tan and Ouayng, 2004).

Also, the culture issue is likely to be important factors affecting the development of e-commerce (Ribbink *et al.*, 2004; Gefen *et al.*, 2005). Lynch and Beck (2001) suggest that Internet users from different country and origins showed major differences in beliefs, attitudes, perceptions and Internet-based consumer behaviours depending on their native country or region. This study also indicated that culture is the key to identify different patterns of Internet users.

The continuous growth of e-commerce demands more empirical and comprehensive studies of the issue of security, trust and cultural influence. In the past few years the increasing numbers of publications for both industry and academic area is needed. Therefore, this study has been worth to take further research and to fill in the gap in the e-commerce study.



## **1.5 Research Objectives**

This thesis contributes to theories by having focused on different factors influencing consumer's decision to use e-commerce. The aim of this research project is to examine the cultural influence on consumers' trust in e-commerce. The primary purposes of this study are to identify issues and factors important to the development of e-commerce that may be influenced by cultural difference. E-commerce is considered a powerful medium for business development across Mainland China, Taiwan and Hong Kong because it provides a communication platform that facilitates social interaction and business transaction across regions. To achieve this aim, this study will take the case of Chinese culture as an object to investigate.

This study examines e-commerce across Great China Region (i.e. Mainland China, Taiwan and Hong Kong) to uncover relationships among certain factors and attitudes about e-commerce. Such understanding will enhance our knowledge about consumer attitude towards the e-commerce in Chinese societies and help companies to develop better e-commerce strategies.

Previous studies referred to three perspectives in the e-commerce literature: the trust perspective, the security perspective, social and cultural perspectives<sup>2</sup>. This research addresses the following questions:

- 1. Do Chinese cultures share the same trust or have identical consumer behaviour to e-commerce?**

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<sup>2</sup> These three perspectives will be discussed in Chapter three.

- 2. What is the relationship and impact of cultural to consumer behaviour in e-commerce?**
  - Dose culture influence directly affects consumer's online trust?
  - Is there a culture influence in the effect of online security issue?
  
- 3. To what extent have major cultural factors influenced consumers' trust towards e-commerce in Chinese society?**
  
- 4. What are the similarities and differences in security and trust issue about e-commerce that may be influenced by Chinese culture in different regions?**
  - Do Chinese consumers in different regions have same attitudes towards online trust?
  - Do Chinese consumers in different regions have same views on online security?
  
- 5. What is the relationship between trust issue and security issue in e-commerce?**

The above mentioned questions would answer in last chapter. The following section provides a brief description of research method.

## **1.6 Research Methods**

This research involves a quantitative data collection. To achieve the objectives of this study, questionnaire survey was conducted to ensure the validity and reliability of data. Questionnaire is the main research method for quantitative approach and it had been widely used in social science and business research. The main literature provided sources of ideas for questions that would be used in designing the final questionnaire. The distinguish features of surveys are the form of the data and the method of analysis, which allows the researchers to find differences in particular case (De Vaus, 1986). The major advantages of using questionnaire are cheap, fast and efficient (Hakim, 1992). It normally costs no more than half of what a comparable interview survey would cost. Questionnaires can also reduce interview bias, such as the form of probing for answers and recording of answers during interview (Solomon, 1999). The questionnaires can be spread in wide geographic area, particularly isolate areas, and replies can be encouraging respondents to feel free in answering questions in their own time. To consider the time and resource constraints, the online questionnaire survey was conducted for this research. This type of research method gives the researcher to have control over time, content and sequence of survey.

### **1.61 Sample Selection**

The data was collected from Internet user in China, Hong Kong and Taiwan during the June and July of 2008. The collection method was purposive, non-probability sampling conducted within the areas involved. This study also used factor analysis for certain questions to define constructs.

As this research explored different factors influence e-commerce across Mainland China, Taiwan and Hong Kong, online stores web site (Gamer.com.tw), newsgroups (PPX.net), online forums (FDZ.com) and Web-board postings (Discuss.com.hk) were selected for this research. There were two selection criteria: forums and online stores with over 10,000 visitors and 1,000 discussion posts. As results, these four web sites were selected for the study participation.

An online survey was posted in My3q.com, an online survey website to collect data. Research invitations were posted in these four web sites (Gamer.com.tw, PPX.net, FDZ.com, Discuss.com.hk) located in China, Taiwan and Hong Kong. A hyperlink was provided for the respondents who were interested in this research.

The questionnaire was developed in English and translated to Chinese by a person whose first language is Chinese. This questionnaire was initially administered as a pre-test to small group of participants and there were no major problems with understanding the questions.

Two Chinese versions of the questionnaire were administered as the survey was conducted in three different Asia regions (China being predominantly Simplified Chinese version, Hong Kong and Taiwan being predominantly Traditional Chinese version). These two Chinese versions were then compared and no item was found to pertain to a specific cultural context in terms of language.

As the survey was intended to apply to a wide geographical area, the chosen method of delivery was website hyperlink invitation. The study provided links on several online stores web site, newsgroups, online forums and Web-board postings from

different geographical area and by inviting them to visit the online survey site (<http://www.my3q.com/>). The research purpose and instruction of questionnaire was provided in the first page of the survey.

## **1.7 Research Structure**

This thesis is divided into seven chapters. The main topics of this research are:

- Chapter 1- Research Background
- Chapter 2- E-commerce Development in Great China Region
- Chapter 3- Literature Review
- Chapter 4- Research Methodology
- Chapter 5- Analysis of Results I
- Chapter 6- Analysis of Results II and Discussion
- Chapter 7- Conclusions, Limitations and Further Research

Chapter 1 provides the rationale and brief description of the focus of this research. Specifically, it includes research objectives, research motivations, brief research method and existing theory used in this thesis.

Chapter 2 presents general background information of this study, such as the development of e-commerce in Mainland China and statistical data from Internet users in Great China Region, including China, Taiwan and Hong Kong.

Chapter 3 is an extensive literature review. This chapter contains a literature review, discussion of the issues under culture influence and summaries of major research in e-commerce. This chapter discusses the growing literature on trust and security issues in e-commerce and some published empirical studies addressing culture difference of

consumer behaviour in e-commerce.

Chapter 4, Research methodology presents the research detail method of this study, including the approach, the survey instrument, the pilot study, data collection methods, and limitations to validity and reliability. It also describes the development of measures and explains the decision on sample size.

Chapter 5 describes the data collected for this study and reports the data statistically analysis. This chapter involved descriptive statistical analysis utilizing. The descriptive analysis discovered respondents' preferred responses to state proposition with each question.

Chapter 6 describes how the data were analysed and discusses the practical implementation for the survey result. It gives the results of the hypotheses tested along with the statement on the validity and reliability of the measurement.

While the last Chapter summarises the major findings of the study conclusions and recommendations for further research, also and states the limitations of the research. An overview of main findings is presented and contributions of this study are highlighted in this chapter.

The next chapter focuses on Internet development and demographic background in Great China Region (Mainland China, Hong-Kong SAR, and Taiwan) to see how the e-commerce develops in different regions.

## CHAPTER 2

### E-COMMERCE DEVELOPMENT IN GREAT CHINA REGION

#### 2.1 Introduction

After China's accession to the World Trade Organisation (WTO), Cyber markets opened to foreign investment. The number of Internet users in mainland China has been steadily growing and this growth has provided the impetus and the opportunities for global and regional e-commerce. Thus, understanding the e-commerce background and development in mainland China is essential. This study will investigate the influence of the national cultural characteristics on the implementation of e-commerce in the Greater China Region, which includes three Chinese ethnic majority political entities, China, Hong-Kong SAR, and Taiwan. These three regions were all influenced by Chinese culture historically.

Furthermore, in spite of great similarities in their ethnic composition, the political systems in three regions have been influenced by different historical paths in modern times. While China's democracy was overturned by the Communist Party in 1949 after the defeat of the Nationalist Party, Taiwan becomes a full democracy after several presidential elections. While Hong-Kong was ruled as a British colony, it was handed over to China in 1997 and became a special administrative region. As a result, these three regions present fascinating cases to study how politics has interacted with cultural characteristics in the making of Internet regulatory policies in the Greater China Region (Access Asia, 2001).



This chapter provides the literature for the e-commerce development in Great China Region.

Figure 2.1: Map of Great China Region



Source: Hong Kong in Figures, 2008. Census and Statistics Department, Hong Kong. Available from: <http://www.censtatd.gov.hk> [Access 15 March 2008].

## **2.2 People's Republic of China**

The People's Republic of China (PRC) is the third largest country in the world with wide geographic area worth 9.6 million km<sup>2</sup> (Gov.cn, 2007). The country has 34 provincial-level administrative areas, which including 23 provinces, five autonomous regions, four municipalities and two special administrative regions, and has the world's largest population, 1.3 billion in 2006, 58.2% of which are rural residents (China.org, 2007).

China's 1949 planned economy was replaced in 1979 by a socialist market economic system. China is now one of the world's major economic entities, with a high growth rate (China.org, 2007). In the first quarter of 2008, China's GDP was 6,149.1 billion RMB (US \$900 billion), 10.6 percent higher than the previous year (National Bureau of Statistics of China, 2008). In the last year, when global faced the difficulty of financial crisis, China achieved over 9 percent GDP growth, the fastest growing economy in the world.

### **2.21 E-Commerce Development in People's Republic of China**

The adoption of economic reforms and an "open door" policy in China resulted in substantial economic growth within the Chinese population of 1.3 billion. China has been rapidly building up its IT and telecommunications infrastructure for e-commerce applications since the late 1980s (Gunasekaran, *et al.*, 2004; Mueller & Tan, 1997). The concept of e-commerce emerged in China in 1993, when the foreign businesses in China started to use EDI to simplify trading processes (CNNIC, 2002). Soon

Chinese businesses began to adopt this new technology, which subsequently developed in four stages (CNNIC, 2002):

- Initiation (1993–1995);
- Contagion (1995–2000);
- Cooling (2000–2004),
- Permeation (2004~now)

In 1994, the country's first network (the National Computing and Networking Facility of China) was established, and connected to the global Internet through a joint project with the China Academy of Science, Tsinghua University, and Peking University (Guo & Chen, 2005). The Ministry of Trade and Economic Cooperation established the China International Electronic Commerce Center in 1996 to research and promote digital business (CNNIC, 2007). Internet-based eCommerce was launched in China in 1997, and grew suddenly in a 'leaping' pattern in the Contagion Phase, then slowly after the collapse of the dot-com bubble in 2000 (the Cooling Phase) (Guo & Chen, 2005; CNNIC, 2007). During the "Permeation" Phase, the total number of Internet users in China had grown to 94 million in 2004, which making China the second largest Internet user market in the world. The adoption of the Internet is largely concentrated within the ten most developed provinces and autonomous municipalities, mostly along the East Coast such as Shanghai and Guangzhou (Guo & Chen, 2005; Yu, 2006).

The development of e-commerce in China was tending to government oriented. The direct intervention of the central government is important in order to promote technological innovation (Seyal, et al., 2004), i.e. the Internet. Enabling government

policies, such as trade and telecommunications liberalization, are likely to have the biggest impact on the adoption of e-commerce. Government policies make Internet access more affordable, as well as increase pressure on businesses to adopt e-commerce to compete (Gibbs, et al., 2003). The Chinese government is providing guidance on policymaking, financial investment, infrastructure development, education, human resources development, market transforming and service improvement (Wang, 2001). Policies, laws and regulations for the governing of telecom, Internet services, electronic information and other service areas that provide the technical platform for e-commerce were enacted recently (Guo, 2001). The Ministry of Labour and Social Security introduced the Professional Standards for e-commerce Specialists and the Regulation on National Licensing Procedure in 2001 to ensure the qualification of e-commerce specialists (Yuan, 2005). In 2005, the State Council issued the first national guideline dealing specifically with e-commerce development, some opinions on speeding up the development of e-commerce, in which the Government decided to take measures in six areas (Alamusi, 2005):

1. Legal environment,
2. Supporting industries,
3. Enterprise information,
4. Technical support,
5. Education and
6. International cooperation.

However, considerable tension exists between promoting the Internet and restricting its use. The Chinese Government controls, censors and monitors all aspects of the Internet, and the international gateway, which connects China to the World Wide Web. This was

done in order to restrict access to politically harmful information and to guard national security safely (Mukti, 2000).

In summary, the increasing number of Internet users and government guidelines promoting adoption of Internet technology in companies is facilitating the development of e-commerce in China. However, government oriented control and restrictions, and lacking of legal regulation, are the sources of considerable tension and may impede its further development.

The growing popularity of the telephone, the increasing number of internet users, and the extensive competition in the telecommunication industry are all prerequisites for e-commerce development. But they do not indicate the extensive of expansion of the same pace in e-commerce. There are multiple factors that contribute to the slow development of e-commerce in China. As noted by Guo & Chen (2005), the focus of e-commerce will be different in China than it is in Europe and America because of the difference in traditional business models, conventional consumer behaviours and consumer expectations.

There were 0.67 million websites in China in 2004, 60.7% were company or enterprise websites (CNNIC, 2007). Most websites provide sections “About the Company (85.3%)” and “Products (81.9%)” (CNNIC, 2007). For other information, 56.6% have “Events”, 40.0% have “Contact Us”, 36.1% have “Product Search”, 18.6% have “Online Query” and 12.7% have “Virtual Community” (CNNIC, 2007). Just over half (50.9%) of company websites have an online database (CNNIC, 2007).

The potential of e-commerce to bring new markets to Chinese companies, improve market information and transparency of pricing, and enhance distribution of goods and services is widely acknowledged.

Many organisations in China are using the Internet to access and retrieve information, disseminate knowledge, and provide online services to improve the organisation's efficiency, effectiveness and productivity. The potential of e-commerce is to bring the new markets to Chinese companies, including expansion for existing products, improve market information and transparency of pricing, cost reduction and enhance distribution of goods and services is widely acknowledged (Tan & Wu, 2004).

Findings in CNNIC surveys have significant implications for companies that are considering conducting B2C e-commerce in China. The B2C market is not likely to gain a dramatic rise in the next few years based on the CNNIC surveys. The traditional retail model will still dominate the consumer market in China. However, as the number of Internet user increases, companies can leverage Internet resources with its traditional businesses. Out of 17,833 Internet users surveyed in June 2004, 37.8 per cent reported they had some purchasing experience over the last 12 months compared to only 9.79 per cent in a similar survey in 2000.

China has been rapidly building up its IT and telecommunications infrastructure for e-commerce applications since the late 1980s (Gunasekaran, et al 2004; Karakaya, 2001). Internet primarily used as a tool to reach out to foreign companies and as a means for conducting business-to-business (B2B) or business-to-consumer (B2C) e-commerce. Businesses and consumers are using the Internet to a large extent for e-mail, search machine, advertisements, homepages, electronic trade fair

advertisement, and business document exchange and document transmittal (Trappey & Trappey, 2001).

In 1997, the former Information Office of the State Council appointed China Internet Network Information Centre (CNNIC) to collect information on the Chinese Internet market in order to help government and commercial enterprises with their decision making. CNNIC is a non-profit organisation under the Ministry of China Information Industry. The information included the number of host computers, Internet users, distribution of users, information traffic and the registration of domain names. The first survey was undertaken in October 1997. After the first survey was completed, the surveys began to be conducted twice a year, every January and July. Those survey reports have been regarded as the leading authority on China's Internet statistics (CNNIC, 2007).

CNNIC semi-annual survey reports collect a significant amount of information about the Internet development in China. The survey reports provide valuable information on the overall Internet development in China, including regional distribution, Internet users' behaviour, preference, and their opinions on Internet services and existing e-commerce services (CNNIC, 2007). Understanding the answers to those survey questions is very helpful for businesses that are considering exploring e-commerce market in China.

After years of development of China's online shopping market, there has been a drastic increase in the number of online shopping web sites in China. Statistics released by the PRC Ministry of Information Technology indicate that the number of retail web sites in 2001 totalled 2,046 and reached 2,219 by 2004. Retail web sites

accounted for 49.5 per cent of China's e-commerce in 2004 with transaction volume of online shopping estimated at 4.2 billion RMB. By 2005, the transaction turnover of online shopping amounted to 5.6 billion RMB, a 33 per cent increase. With China's online shopping environment maturing and offering improved levels of service, it is predicted that the volume could reach 46 billion RMB by 2010 (CNNIC, 2007).

## **2.22 Internet User in China**

Based on the survey in 2007, the population of Internet users has increased rapidly in China. China has an Internet user population of 68 millions. China's infrastructure for e-commerce diffusion is characterised by 'disparities' among geographic areas, demographics, industrial fields, and firm size (CNNIC, 2007). Large cities and economically advanced coastal provinces enjoy much better infrastructure. Certain industries including banking and insurance are information intensive and better positioned to adopt any information-related activities. Large enterprises have bigger IT budgets and better-trained staffs than small and medium-sized enterprises (CNNIC, 2007). Internet and e-commerce are better adopted among younger generations with higher education. The infrastructure disparity leads to e-commerce diffusion disparity in China. Current e-commerce activities in China are concentrated in large cities, coastal provinces, certain industries, large enterprises, and among well-educated young people (Zhu, 2003).

Based on the survey in June 2009(CNNIC, 2009), the population of Internet users has increased rapidly in China from 2005 (Fig. 2.2). China has an Internet user population of 137 millions in 2007 and there was estimated to be more than 140 million at end of



2008. By 2009, the number of Chinese Internet users had reached to 338 million. The number of Internet users increased by 40 million compared with late 2008, which increase 13.4% within six months (CNNIC, 2009). As the number of China Internet users has exploded, this upward trend has created tremendous business opportunities in China. However, studies related to e-commerce in China are very limited.

Figure 2.2 Statistical survey on the Internet development in China: **Blue Bar:** Internet user population, **Red Line:** Internet use ratio (CNNIC, 2009)



Source: China Internet Network Information Center, 2009. Statistical survey report on the Internet Development in China. Available from: <http://www.cnnic.net> [Access 17 Nov 2009].

Internet users in China can be penalised for browsing information that government claims to be harmful to public security. Chinese government can examine individual users' activity in the name of public security (Wang, 1999). The lack of respect for individual freedom and decision not only reflects the political system in China, but,

more deeply, it may reflect the national cultural characteristics of Chinese society where collective benefits are placed more emphasis than individual freedom of choice.

Broadband connection is the most widely used connection although other connection types have gained significant usage over the past four years. Near half of the Internet users use broadband connection, 33% user still using dial-up connection and approximately 19% use leased lines (CNNIC, 2006). Compare with the result in 2002 which only 6.6 million users use broadband connection, the number of using broadband connection has increased more than ten times since then. The number of broadband users had reached 320 million in 2009 (CNNIC, 2009).

The distribution of internet users is uneven. According to CNNIC report in 2006, the northern, eastern southern regions of China contain the major Internet users and Internet resources. The Internet users from these three areas account for over 70% of the total Internet users. The distribution pattern truly reflects the uneven economic development in China, for example Beijing and Shanghai are the richest in the north and east regions from the whole country.

Findings in CNNIC surveys have significant implications for companies that are considering conducting B2C e-commerce in China. The B2C market is not likely to gain a dramatic rise in the next few years based on the CNNIC surveys. The traditional retail model will still dominate the consumer market in China. However, as the number of Internet user increases, companies can leverage Internet resources with its traditional businesses.

The largest impact of business-to-business e-commerce is likely to be on small and

medium-sized enterprises (SMEs), because many large businesses already have EDI (Electronic Data Interchange) systems in place. The accessibility of the Internet makes electronic commerce a realistic possibility for SMEs and is likely to lead to its widespread diffusion (Ministry of Information Industry, 2004).

Many Chinese firms fall behind in conducting actual e-commerce transactions, mostly because barriers in business, legal and cultural perspectives fail to accommodate the technology progress (Littler and Melanthiou, 2006). The lack of the solid historic foundation of deploying and utilising internal information systems and the poor integration of business process with information systems may slow down technology progress (Yolles, et al., 2006). There are many other non-technical barriers to e-commerce diffusion in China. The most significant barriers include the lack of security, lack of a system to monitor and guarantee buyer and seller credibility, and an inefficient delivery system (Furnell & Karweni, 1999). In addition, there is not a sophisticated legal framework to facilitate e-commerce activities and to protect the interests of both vendors and consumers (Gunasekaran, & Nagi, 2005).

China needs to do a lot to have a basic platform to embrace e-commerce. China is currently rapidly developing the infrastructure necessary for e-commerce. China's transition from a plan-based economy to a more market-driven one designates the country as an emerging market in the global economic system, one that requires keeping pace with digital advances. Government and private efforts are working toward overcoming the lack of infrastructure. The business-to-business market is expected to expand once a number of telecommunications infrastructure issues are resolved (Mueller & Tan, 1997; Yu, 2006).

The Chinese government has begun to see the value of E-commerce and has established several sites itself such as The Ministry of Foreign Trade and Economic Co-operation's (MOFTEC) China products site at Chinamarket.com. MOFTEC run's China International Electronic Commerce Centre (CIECC). CIECC was created in February 1996 to research, promote and operate China's international e-commerce (Access Asia, 2001)

There are now a growing number of E-commerce projects including the People's Bank of China (PBoC) and its E-mall project, an on-line electronic retailing mall which has advanced security to protect consumer's credit card numbers and uses a secure electronic transaction (SET) system.

To improve e-commerce in China, business and enterprise will need to solve out the basic problem that they used to have, such as lack of basic automation in place, poor management skill, and lack of e-commerce integration. Effective strategies towards the adoption of e-commerce need to be based on a good understanding of the costs and benefits of using new IT technologies. Developing and implementing appropriate e-commerce strategies will be important for maintaining competitiveness ( Daniel & Wilson, 2002; Yu, 2006).

A healthy e-commerce infrastructure should be supported both by advanced technologies and by a friendly business, legal and cultural environment. On the other hand, the impressive annual growth rates of B2B and B2C transactions in recent years, as well as the positive forecasts, are pointing to the fact that China is making progress and gradually working on its business, legal and cultural barriers while keep

upgrading its technology infrastructure (Salman, 2004; Gao and Koufaris, 2006). It remains to be seen how fast these barriers could be alleviated or even removed.

Government policies regarding e-commerce diffusion should be geared toward passing various laws and regulations to create a legal and safe environment for businesses and consumers. The government could also help, possibly through its state-owned enterprises, to build up financial, certificating, security, and even delivery systems to serve e-commerce transactions.

A recent survey conducted by CNNIC found that only 3.5 per cent of the Chinese respondents were very satisfied with the online shopping experience (CNNIC, 2007). Dissatisfaction usually leads to lost customers and income. Compared with American customers, Chinese customers have several characteristics: their perception of safety is lower; they undertake higher purchasing risks because of fake goods and false advertising; the buyer sometimes is not the consumer; they are more sensitive to price; they are more cautious in making purchase decision (Lu, 2005)<sup>3</sup>. Only 82.4% of Chinese Internet users installed security software and 195 million Internet users were attacked by viruses and Trojan horses online within six months, and the accounts or passwords of 110 million were stolen (CNNIC, 2009). Therefore, a fundamental understanding of the factors affecting Chinese online shopping customers' degree of satisfaction is of great importance to e-commerce.

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<sup>3</sup> Detail of culture influence will discuss in Chapter Three.

### **2.3 The Internet Economy in Taiwan**

In recent years, many Taiwan and Hong Kong firms have been undergoing profound transformations in the pursuit of reducing costs and providing better services to customers. The increasingly internationalisation of products and companies has created the need for cross-border inter-organisational relationships that rely on B2B ecommerce systems. (Trappey & Trappey, 2001; Kelly et al., 2006; Peng, 2007).

Taiwan's total land area is only about 36,000 square kilometres and it lies off the south-eastern coast of the mainland Asia, across the Taiwan Strait from Mainland China. Taiwan population was 22.8 million in 2006, representing an increase of 3.01% (106,144) over previous year (DGBAS, 2007).

Taiwan has a dynamic capitalist economy with gradually decreasing guidance of investment and foreign trade by the authorities. In keeping with this trend, some large, state-owned banks and industrial firms are being privatised. Exports have provided the primary impetus for industrialisation (Taiwan.net, 2008). The island runs a large trade surplus, and its foreign reserves are among the world's largest. Despite restrictions on cross-strait links, China has overtaken the US to become Taiwan's largest export market and its second-largest source of imports after Japan. China is also the island's number one destination for foreign direct investment. Strong trade performance in 2007 pushed Taiwan's GDP growth rate above 5%, and unemployment is below 4% (Taiwan.net, 2008).

Figure 2.3: Map of Taiwan



Source: Geographic area in Taiwan, 2008. Transportation Department, Taiwan. Available from: <http://www.tboc.gov.tw> [Access 15 March 2008].

As a New Industrializing Economy (NIE), Taiwan is unique among Asia-Pacific countries. Both Taiwan's GDP and GDP per capita are situated in the middle of the 21 members of the Asia-Pacific Economic Cooperation (APEC, 2005), below the US and Hong Kong, and above China. In 2001 Taiwan's Global Competitiveness Ranking (GCR) was 21st and its Network Readiness Index (NRI) ranking was 15th (WEF, 2001); these rankings are commensurate with Taiwan's economic performance amongst APEC countries. Taiwan produced US\$ 22,157 million worth of IT hardware in 2000, ranking it fourth in the world, just behind the US, Japan, and Singapore (Chen, 2003). However, Taiwan spent only 1.47% of its GDP on IT products in 2000, below the average of APEC countries. IT applications (e.g., websites, Intranets, electronic data interchange, call centres, and electronic funds transfer) used by the

manufacturing industry in Taiwan were below the global average (Chen, 2003). Despite a well-developed information infrastructure and export-driven economy, Taiwan's e-commerce sales comprised less than 1% of its GDP in 2000 (Gibbs et al., 2003).

According to United Nations Conference on Trade and Development (UNCTAD) E-commerce and Development Report in 2004, while economic levels and adoption of information and communication technology (ICT) have a positive correlation, countries with similar levels of GDP have very different levels of adoption of ICT, and vice versa (Tsao et al., 2004). Given the contradictory macro-statistical facts between Taiwan's economic performance and IT application use, it is interesting to understand what drives B2B e-commerce adoption by companies in different industries in such an emerging economy.

Taiwan is one of Asia's most open and developed Internet communities. The development results in part from private sector investment and government promotion of Taiwan as a regional operations centre (ROC). Industry is supplying technology, locally developed computer hardware, and personnel to Internet strategic initiatives. The government, on the other hand, is providing the right environment to foster growth. A steering committee was formed in 1994 (Deng and Tseng, 1996) to integrate businesses, government services, and citizen activities via the Internet. The legal foundation for Internet economy and e-business is also well established with the passage of the Telecommunications Act, the Intellectual Property Rights Law, the Cable TV Act, the Satellite Broadcasting and Television Act, the Copyright Act, the Open Information Act, the Administrative Process Act, and associated criminal laws (Chen, 1997). The objective of the legal foundation is to create a fair, open and



internationally compliant trade and communications environment with reduced central government control.

As a result of the government's promotion efforts, the number of Internet users reached four million in mid-1999. The Internet content for consumers blossomed when cable television operators, radio stations, and telecommunications companies were allowed to participate in the planning of the Internet and to provide value-added services (IT IS, 1999).

Taiwan's Internet plays an important role in education and public welfare, with recent additions being lifelong learning on-line and network-based medical care systems. Government agencies, cities, businesses, trade associations, schools and colleges are developing Web sites and virtual organisations (Chen, 1997). The emerging virtual organisations are reminiscent of the interlinked distributed industrial structure created during the days of the 1980s "economic miracle".

Taiwan's B2C e-business is undergoing a natural transition from mail catalogue ordering and TV shopping to e-commerce. Well over 17 million credit cards have been issued and more than 10 million cards are in circulation for a population of 22 million people (Taiwan Chain Store Almanac, 1999). These cardholders are accessing the Internet and quickly accept on-line retailing as a viable alternative to "brick and mortar" stores.

Taiwan's e-commerce strength is largely due to private sector efforts to make companies locally and globally competitive. The bulk of the e-commerce development is occurring in the high-tech sector among companies linked to Japanese,

European and American technology firms. The technology companies either mandate e-commerce solutions and local companies adapt the solution or the local companies see the competition adapt the technology and there is a rush to keep up (MOEA, 2005).

The shortage of existing e-commerce solutions from which to model new systems is a serious concern among Taiwan companies. Since many of Taiwan's firms are global enterprises, the redesign of systems includes international business processes and different languages. Without knowing how much the best solution will cost or look like, managers are taking great financial risks implementing e-commerce in their companies (Trappey & Trappey, 2001).

In 2007, the number of general Internet users in Taiwan had reached 14.76 million, which increase 5% (240,000 users) compare to 2006 (FIND, 2008). The Internet penetration rate among male users was 64.8% and that among female users was 64%; it was estimated that 7.5 million male and 7.2 million female users had used the Internet. In terms of the age groups, those between 15 and 19 years of age continued to have the highest percentage of Internet usage at 99%.

According to the Taiwanese household survey results conducted by FIND in 2007, 79% of households users owned personal computers, 71% of households were able to access to the Internet, 69% of households users used broadband connection and 96% of online households were using broadband connections. Broadband penetration in Taiwan is 16.87% and ranks Number five in the world (Chuang, 2005).

The FIND survey results indicated that 79.4% of the households had computers; it was estimated that in 2007, 5.92 million households in Taiwan had computers, representing a year-on-year growth of 2.1%. This showed that the growth of household computer penetration rates in Taiwan had gradually slowed.

On a regional basis, 89.5% households in Taipei City had computers, the highest ratio of all areas, followed by Kaohsiung City (81.7%) and Northern Taiwan (81.5%). Compared with the 2006 survey data, household computer penetration rates were not changed in most areas of Taiwan.

71.3% of households had accessed to the Internet which was 5.32 million. Compared with the data in 2006, the annual growth rate was only 1.3%. In terms of Internet access methods, ADSL remained the dominant technology for household Internet connection in Taiwan. 78.8% of online households were using ADSL connection. The next popular methods of Internet connection were cable modem (5.4%) and optical fiber (2.5%). Households with other types of Internet access method accounted for less than 2%.

According to FIND (Focus on Internet News and Data) survey in 2007, 68.7% of households in Taiwan used broadband Internet and it was estimated that there were 5.12 million households with broadband Internet access. Compared with the 2006 data, the annual growth rate was 12.3%. Taipei City (80.6%), Kaohsiung City (72.2%) and Northern Taiwan (71.0%) had the highest household broadband penetration rates while Eastern Taiwan (57.4%) and the Kinmen and Matsu region (58.8%) had lower penetration rates. Compared with the 2006 data, Central Taiwan (9.6%), Kaohsiung City (8.9%), Eastern Taiwan (8.6%) and the Kinmen and Matsu region (7.5%) had

higher annual increase in terms of household broadband penetration.

## 2.4 Hong Kong

Hong Kong is situated at the south-eastern tip of the mainland of China, with a total area of about 1,104 square kilometres covering Hong Kong Island, Kowloon and the New Territories and Islands (CSD,2008).

Figure 2.4: Map of Hong Kong



Source: Hong Kong in Figures, 2008. Census and Statistics Department, Hong Kong. Available from: <http://www.censtatd.gov.hk> [Access 21 May 2008].

According to the statistics released by the Census and Statistics Department (CSD, 2008), the Hong Kong Population was 6.9 million in early 2008, representing an increase of 0.9% (59,300) over 2007. Hong Kong's GDP was 1,612 billion HK\$ (US \$ 210 billion) in 2007, 9.5% higher than the previous year (CSD, 2008).

Hong Kong is a world financial centre and a hub for international trade. Regarded as Asia's most sophisticated consumer market, the Hong Kong Special Administration Region (SAR) maintains a trend-setting wholesale and retail infrastructure. There are about one million Internet users, with a per capita usage rate about two percentage points less than Taiwan (Lemos, 1998). There is a mature Internet service industry with about 100 Internet service providers (ISPs) that have businesses to extend their reach and provide new and innovative services. As an example, Hong Kong's electronic data interchange (EDI) initiative is improving banking, import/export trade, and stock trading by boosting transaction speed and by making transactions more transparent. Smart card technology (a credit card with embedded integrated circuit) is automating the way consumers do business with retailers and service providers (Mailoux, 1998). Hong Kong is a popular site for testing innovative products like the electronic purse that attracted 300,000 users during the first few months of introduction. Multi-function smart cards (mobile phones that provide an automatic teller function and can reload electronic purses) and loyalty club cards (cards that allow consumers to redeem bonus points accrued through purchases) have entered the marketplace with similar positive signs of consumer acceptance (Chan, 1998).

Hong Kong has a unique role in the region as a center for international commerce and free trade. Although Hong Kong's Special Administrative Region lacks a strong manufacturing infrastructure, it serves as the gateway to China's consumer markets and manufacturing operations (Gunasekaran & Nagi, 2005). The development in e-business in Hong Kong is essential to its banking services and logistics support operations. By working closely with China's emerging enterprises, Hong Kong has the opportunity to establish itself as the "cyber gateway" of China (China Online,

1999).

In Hong Kong, e-commerce has been growing quickly with a number of listed Hong Kong companies expanding their involvement in e-commerce. Also, Hong Kong is highly favoured by foreign companies to conduct e-commerce due to her free port status and freedom in foreign exchange control and information technology activities (Law & Lam, 2001).

According to Hong-Kong Bureau of Statistics in 2004, personal computer penetration rate is 71.1%, while household Internet penetration rate is 64.9%. About 21% of the total population in Hong-Kong (1.46 million) is using broadband services (Information Services Department, 2005). Broadband service also penetrates 60% of the residential households (Information Services Department, 2005). Hong-Kong (69.9%) has higher Internet penetration rate compare to China (7.3%) and Taiwan (53.5%) (Internet World Statistics, 2005).

## 2.5 Summary

This chapter has discussed Internet environment and development in Great China Region. The review of the Internet environment literature reveals several interesting findings regarding the increasing number of Internet users in China. First, there is a conflict between e-commerce security and Internet user growth. Second, the lack of legal regulation for consumer, and is heavily influenced by government control. Third, the regulation for e-commerce are generally vague, thus online vendors have to formulate their own policies, design their own arrangements for protection and decide the pace of e-commerce implementation. This gives consumers limit option and less intention to shop online.

Although Internet users from China, Taiwan and Hong Kong share a similar Chinese culture, differences in social system, lifestyle and socio-economic status may create different needs and behaviours, especially in the rapidly changing area of e-commerce. These differences across China, Taiwan and Hong Kong may influence the view of security issues and online trust formation in e-commerce.



## **CHAPTER 3**

### **LITERATURE REVIEW**

#### **3.1 Introduction**

This chapter provides an overview of the literature and theoretical backgrounds for this study. The structure of this chapter is presented as follows. Section 3.2 defines and reviews the recent literature on e-commerce research. Section 3.3 reviews the growing literature of Internet security issues. Section 3.4 discusses the importance of online trust. This section includes the definition of trust and general trust issues in e-commerce. As culture is an important factor in many study of e-commerce development Sections 3.5 and 3.6 discuss the cultural influence and the Chinese cultural influence. Section 3.7 focuses on other factors affecting the development of e-commerce, such as purchasing behaviour and consumer attitude. Section 3.8 the proposed research model present the structure of this thesis, including a proposed framework. Finally, section 3.9 summarises the content of this chapter.

### 3.2 E-commerce

The Internet is a unique forum for conducting business. Online shopping has been growing phenomenon all over the world, especially among countries with well-developed infrastructure for marketing activities over the Internet.

As for this study, the author adopts the definition of e-commerce defined by Schneider and Perry (2001) as “the use of electronic data transmission to implement or enhance business processes”(p.10). The term “business processes” was specifically described as “the activities in which businesses engage as they accomplish specific elements of commerce” (Schneider and Perry, 2003, p. 9). Electronic commerce is the manner of doing business where the seller and the buyer do not physically meet, and where the deal is communicated and conducted via certain types of electronic communication devices. There are a number of e-commerce definitions purposed by both academics and practitioners (Jarvenpaa and Tractinsky, 1999; Hoffman *et al.*, 1999; Teo and Liu, 2007). To most people, the term e-commerce simply implies shopping on the Internet. To others, e-commerce encompasses not only the buying and selling of goods, but also various processes such as advertising and brand building, delivery of information and products or services, providing customer service before and after the sale, collaborating with business partners, and enhancing productivity within organisations, to support the goal of buying and selling (Daniel and Myers, 2000; Applegate *et al.*, 1996; Timmer, 1998; Zwass, 1996). Applegate *et al.* (1996) summed these e-commerce-related processes as a wide range of activities up and down the value-added chain both within and outside the organisation.

According to the communication devised used, the Electronic Commerce Branch of

the United Nations Conference on Trade and Development (UNCTAD, 2000) defines e-commerce into two ways. Narrowly, e-commerce is 'a commercial transaction whereby the order for a good or service is made using some forms of the Internet based communication'. 'The broad definition includes the use of the Internet and non-Internet communication system, such as telephone ordering, interactive television and electronic messaging'. The delivery and payment may be performed either online or off-line in the physical world.

According to Schneider and Perry (2003), specific elements of commerce on the seller's side include identifying customers' needs, creating products or services, promoting products or services to customers, engaging in transaction processes, delivering products or services, processing payment, and providing after-sales services (Table 3.1). Schneider and Perry (2003) add that not all of these elements or activities of commerce benefit or can be accomplished effectively by using electronic commerce technologies. Some activities of commerce use traditional commerce activities more effectively. This depends on the current state of available technologies and the way business organisations are structured.

For the purpose of this research, e-commerce is classified according to business focus and business format. According to the relationship between the transaction parties, e-commerce can be categorised as B2B, B2C and C2C. B2B stands for business-to-business, while B2C stands for business-to-customer and C2C for consumer-to-consumer.

**Table 3.1: Element of Traditional Commerce**

<b>On Seller's side</b>	<b>On Buyer's side</b>
Conduct market research to identify customer needs	Identify specific need
Create product or service that will meet customers' needs	
Advertise and promote product or service	Search for products and services that will satisfy the specific need
	Select a vendor
Negotiate a sale transaction, including: <ul style="list-style-type: none"> <li>• Delivery logistics</li> <li>• Inspection, testing, and acceptance</li> </ul>	Negotiate a purchase transaction, including: <ul style="list-style-type: none"> <li>• Delivery logistics</li> <li>• Inspection, testing, and acceptance</li> </ul>
Ship goods and invoice customer	
Receive and process customer payments	Make payment
Provide after-sale support, maintenance, and warranty services	Perform regular maintenance and make warranty claims

Source: Schneider, G. P. & Perry, J. T. (2003). *Electronic Commerce* (2nd Edition.): Course Technology, pp 6, 8

As for a business focus, the type of buyer (end customers or business customers) is used to identify a type of business focus (Turban et al., 1999). If a buyer is an end consumer, it is called business-to-consumer (B2C) e-commerce (Applegate et al., 1996; Riggins and Rhee, 1998; Plant, 2000; Fruhling and Digman, 2002; Afuah and Tucci, 2001; Kim *et al.*, 2008). Examples of B2C model is Amazon.com. When a buyer is an organisation or a business customer, it is called business-to-business (B2B) e-commerce (Applegate *et al.*, 1996; Riggins and Rhee, 1998; Plant, 2000; Fruhling and Digman, 2002; Trepper, 2000; Afuah and Tucci, 2001; Tan *et al.*, 2007). The B2B model takes a variety of forms. There are basic B2B storefronts and B2B e-marketplaces, or web-based platforms that bring multiple buyers and sellers together in a virtual marketplace (Napier *et al.*, 2001; Tan *et al.*, 2007). Alan Amling, director of electronic commerce for UPS, described some of the key difference between B2B and B2C as follow (Wan, 2002):

- B2B purchase quantities are larger.
- B2B payment method is typically by purchase order, while B2C is by credit card.
- Negotiations are more common in B2B and reporting needs are more advanced.
- Relationships are much more important in a B2B environment.
- Switching costs are typically higher in B2B.

Example of B2B includes Dell.com. Even though Dell.com also sells its products and services to consumers (B2C), its main transaction value is created from business customers. To determine a business focus of an e-commerce company, this study looks at the main source of its sale revenues. If its main sale revenue comes from end-customers/consumers, it will be considered as a B2C ecommerce. If its main sale

revenue comes from business customers, it will be considered as a B2B ecommerce.

Electronic commerce, especially Internet based e-commerce, is widely believed to be an important force in international business can not be decoupled from geography and culture specific issues.

The Internet is a unique forum for conducting business. It can remarkably facilitate business transaction, but can also introduce uncertainties into business transaction. These uncertainties, such as legal effect of electronic contracts, raise question about the reliability of e-commerce transactions. In fact, numerous studies and investigations have unveiled the fact that security and trust plays a critical role in e-commerce, and the lack of security and trust are the main obstacle thwarting the development of e-commerce (Jarvenpaa & Tractinsky, 1999; Yoon, 2002; Hoffman *et al.*, 1999; Dayal *et al.*, 1999; Flaviain & Guinalu, 2006; Kim *et al.*, 2008; Lian and Lin, 2008).

### 3.3 Internet Security

Evidence suggests that the principal reasons why people do not purchase via the Internet are related to online security and policy, reliabilities of companies, and web site technology (Furnell and Karweni, 1999; Jarvenpaa *et al.*, 1999). Since personal and financial information can be intercepted and used for fraudulent purposes, e-commerce involves greater security concerns than traditional commerce; Internet users need a sense of security when conducting financial transactions, and it is still one of the major barriers to e-commerce growth (Gefen, 2000; Lee and Turban, 2002).

The following studies investigated the factors and considerations that affect online shoppers' purchasing behaviour: Forrester (1999) discovered that security issue is one of the main factors that prohibit consumers from purchasing online products. Similarly, Salkin (1999) and Cockburn and Wilson (1999) in their respective studies, indicated that a lack of security and network reliability are the two most important obstacles hindering the advancement of online shopping. A survey conducted by the European Electronic Messaging Association (Liu and Arnett, 1999) found that more than 79% of respondents indicated that security is a top concern when conducting electronic commerce activity on the web. Worzala *et al.* (2002) had indicated that the threat of security is one of barrier to e-commerce growth in both the USA and UK studies.

Online security was defined as a threat that creates a circumstance, condition, or event with the potential to cause economic hardship to data or network resources in the form of destruction, disclosures, modification of data, denial of service, and fraud,

waste and abuse (Kalakota and Whinston, 1997). Furnell and Karweni (1999) identified that e-commerce security issues can be different with three sides of e-commerce relationships, including security at the user side, security during transport of data and security at the merchant side. They also found that Internet security issue would influence people to buy online and more people do not shop online because of security worries.

Seven members of the Lopht Heavy Industries, an independent watchdog group composed of seven hackers, informed the Senate Committee on Governmental Affairs in 1998, that “it would take only 30 minutes for them to render the Internet unusable for the entire nation” (Yasin, 1998). In the US, Officials from the General Accounting Office (GAO) also met with the committee and stated that the GAO has uncovered serious computer security weaknesses at both the State Department and the Federal Aviation Administration in the US that could jeopardise the operations of both governmental agencies (Yasin, 1998).

Hawkins *et al.* (2000) report that there are several methods could prevent Internet security breach, including firewalls, user authentication, data authentication, key management, digital certificates, intrusion detection systems, virus detection, virtual private networks and extranets. However, they note that each Internet security method had unique features and limitations; it may take some time to develop stronger methods for data security.

While many tactics provide assurance of protection, carelessness can also be a key factor. As a result, awareness training and education should be used to remind staff that an Internet security breach could have a profound effect on the health of the



organisation and, hence, their job security (Everett, 1998; Gefen, 2000; Lee and Turban, 2002).

The belief in structural assurances can lead to trust. Shapiro (1997) defines structural assurances as structural safeguard such as regulations, guarantees, and legal recourse. Regulations such as contracts, company policies regarding privacy and security enable to feel assured about their expectations of the other party's future behaviour (Sitki, 1995; Laforet and Li, 2005).

### 3.4 Online Trust

Lack of trust of online businesses is one of the main reasons for customers from not engaging in commercial transactions on the web (Hoffman *et al.*, 1999; Lee and Turban, 2002; Pavlou, 2003). Therefore, the user's feelings of trust toward an e-commerce are an important determinant in considering his/her intentions to purchase, and consumer behaviours related to e-commerce.

The literature of consumer trust in e-commerce has grown quickly in recent years. A number of researchers have begun to investigate the role of consumer trust in e-commerce decision making and several models have been developed (Jarvenpaa *et al.*, 2000; Lee & Turban, 2000). In such models trust is generally seen as a factor, which can affect a consumer's willingness to buy. The study of consumer trust in e-commerce had been focus of marketing and consumer behaviour. With increased familiarity with e-commerce, consumer have raised more concern about online trust, system security and information privacy.

Trust plays a critical role in e-commerce. Trust is an important element affecting consumer behaviour. Generating trust is a complex, uncertain process; it depends in part on how the parties behave and in part on the party's characteristics. To develop effective trust, each communicator must be willing to signal to the other that each chooses to behave in a cooperative manner. Morgan and Hunt (1994) defined trust as one party's confidence in an exchange partner's reliability and integrity.

Trust is also defined as "*one's willingness to rely on another's actions in a situation involving the risk of opportunism*" (Williams, 2001. p. 348). Trust is invisible but

people can feel its presence everywhere in society. It plays a role across many disciplines, including sociology, psychology, economics, political science, history, philosophy, and computer science (Sitkin and Roth, 1993; Gambetta, 1988; Coleman, 1990; Kipins, 1996; Kim and Tadisina, 2007).

E-commerce is basically driven by the progress of technology. Nonetheless, technology is a double-edged sword. On the one hand, the Internet can bring substantial benefits to business such as promoting efficiency and expanding markets (Varadarajan and Yadav, 2002). On the other hand, people doing business online have to face some problems caused by the characteristics of the Internet. Openness and anonymity are the basic characteristics of the Internet. Ironically, while these characteristics are generally accepted as the charms of the Internet, they also constitute the biggest obstacles to establishing online trust (Rust *et al.*, 2002). According to Rust *et al.* (2002), anonymity leads to difficulty in identifying transacting partners, while openness brings serious security challenges to online transactions. Being a new business environment, e-commerce has encountered a wide range of legal issues covering almost every aspect of the traditional business field, such as contract, consumer protection, jurisdiction, taxation, privacy, payment and computer crime (Zeitham *et al.*, 2002). When considering the trust issues e-commerce is facing, the EU Directive in Electronic Commerce states, “For electronic commerce to develop, both consumers and businesses must be confident that their transaction will not be intercepted or modified, that the seller and the buyer are who they say they are, and that transaction mechanism are available, legal and secure. Building such trust and confidence is the prerequisite to win over businesses and consumers to electronic commerce” (Urban *et al.*, 2002, p.45).

Concerns about privacy and trust are among the most important factors that reportedly distinguish buyers from non-buyers online. A study by Jupiter Communications finds that 64 percent of online consumers are unlikely to trust a Web site, even if the site prominently features a privacy policy (Pastore, 2000). This study is not alone. The issue of trust is often raised by practitioners with statements like “trusting a website is like following a helpful stranger in Morocco who offers to take you to the best rug store” (New York Times, 1999). Finally, researchers suggest that the level of trust consumers are willing to place in Web merchants is considered a key factor for the continued growth of e-commerce (Ba, 2001; Houston, 2001; Jarvenpaa *et al.*, 2000).

Trust and security are another important factors influencing consumers’ attitude toward online shopping. Online trust is an important determinant for web sites to succeed in marketplace (McKnight and Chervany, 2001; Balasubramanian *et al.*, 2003; Grabner-Krauter and Kaluscha, 2003; Koufaris and Hampton-Sosa, 2004), and for retaining long-term relationships with consumers (Reichheld and Schefter, 2000; Gefen *et al.*, 2003).

Hoffman *et al.* (1999) argued that lack of trust is stopping large numbers of people from engaging the e-commerce. Lee and Turban (2001) also found that lack of trust is one of the main reasons for not purchasing from online shop. Their research explored the antecedents of consumer trust in Internet shopping by using survey in 405 students in China. The study utilised research model exclusively focused on the antecedents of trust.

Online trust is one of the key obstacles to vendors succeeding on the internet medium;

a lack of trust is likely to discourage online consumers from participating in e-commerce (Jarvenpaa *et al.*, 2000). Online trust in e-commerce is neither defined by the security mechanisms of the online vendors, nor solely determined by an individual's personal traits (Schneiderman, 2000). Online trust can be viewed in four dimensions: trust propensity, general trust of e-commerce, trust in specific companies, and trust intentions (McKnight *et al.*, 2002).

It is important to know whether trust is needed in the e-commerce. Trust would not be needed if actions could be undertaken with complete certainty and no risk and one who trusts is not in a vulnerable position (Rousseau *et al.*, 1998). Trust can be defined as the basic mechanism used to build and maintain a relationship and fosters a long-term orientation in marketing relationships (Morgan and Hunt, 1994). Mayer *et al.* (1995) defined trust as “*the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party*” p. 15)

Since customers who trust are more likely to make an online purchase, the importance of trust as a key facilitator of electronic commerce is increasingly being recognised in academic and practitioner communities (Bhattacharjee, 2002; Gefen, 2003; Flavian and Guinaliu, 2006). Online trust is generated through consumers' positive interactions with an online vendor's web site (Jarvenpaa *et al.*, 2000). When consumers feel comfortable interacting with a web site, they are likely to develop trust in the web site, and trust becomes the key strategy for dealing with uncertainty and fear (Hoffman *et al.*, 1999; Jarvenpaa *et al.*, 1999). In these uncertain situations, consumers' perceptions of a site's information accuracy, ability and willingness to

perform expected activities, and conformance between saying and doing contribute to trusting the site (Koufaris and Hampton-Sosa, 2004).

Online trust plays a key role in creating satisfied and expected outcomes in online transactions (Pavlou, 2003; Yousafzai *et al.*, 2003; Gefen and Straub, 2004; Wu and Cheng, 2005; Flavian and Guinaliu, 2006); where trust exists it increases consumers' beliefs that e-vendors will not engage in opportunistic behaviour (Gefen *et al.*, 2003). Gefen *et al.* (2003) summarise the conceptualisations of trust from prior research as:

- A set of distinct beliefs consisting of integrity, benevolence, and ability (Giffin, 1967);
- A general belief or trusting intentions that another party could be trusted, or “the willingness of a party to be vulnerable to the actions of another” (Mayer *et al.*, 1995, p. 712);
- “Feelings of confidence and security in the caring response of the other party” (Rempel *et al.*, 1985, p. 96); and
- A combination of these factors (Gefen, 2000).

Yoon (2002) describes the mechanisms of online trust as: security assurance, reputation, web searching, fulfilment (i.e. willingness to customise), presentation (i.e. web quality), technology, and interactions (e.g. online forums). These mechanisms are categorised into three dimensions of online trust:

- (1) Technical-based: web searching, technology and presentation;
- (2) Uncertainty of transactions and security: security assurance; and
- (3) Competency-based: reputation, fulfilment, and interactions.

Trust is a predictor of Internet vendors' positive attitudes toward online shopping in B2C relationships (Gefen *et al.*, 2003). Gefen's study (2002) also stated that trust is a critical factor influencing the successful proliferation of e-commerce. Garbarino and Johnson (1999) stated that trust can increase consumer's confidence and reduce the perceived risk of using e-commerce.

A high degree of trust not only stimulates and meets consumers' high expectations of satisfying transactions, but also eliminates uncertainty, perceived risks, and interdependences in most online transactions (McKnight and Chervany, 2001; Pavlou, 2003). In addition, the higher the degree of consumers' trust, the higher the degree of purchase intentions of consumers, and the easier it is for companies to retain consumers (Jarvenpaa and Tractinsky, 1999; Gefen and Straub, 2004).

One of the earliest studies identified the trust influence of e-commerce were conducted by Jarvenpaa and Tractinsky (1999), and Vitale (2000). In the first study, the authors conducted survey in two industry domains: bookstore and travel agency. They found that consumers recognise differences in size and reputation among online vendors, and these differences influence their assessment of vendor trustworthiness and their perception of risk as well as their willingness to patronise the vendor.

Several studies (Chen and Hitt, 2002; Park and Kim, 2006; Pavlou and Gefen, 2004) had identified there are two types of consumers: stayers and switchers. Stayer is the consumer who consistently sticks to a Web site and switcher is the consumer who switches to an alternative Web site. Also Stayers trust current Web sites more than switchers (Gefen, et al., 2003; Pavlou & Gefen, 2004)

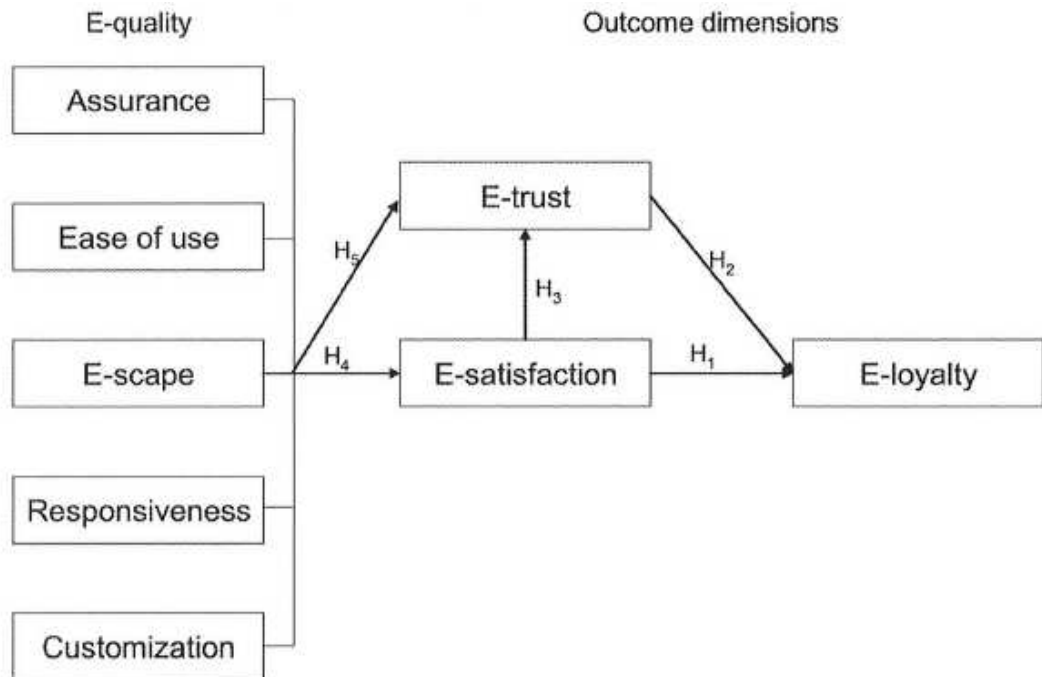
According to a McKinset & Co. research report (2001), lack of consumer trust is critical impediment to the success of e-commerce. Consumers may fear providing credit card information to commercial online vendors, simply because they lack enough trust to engage in business relationships involving financial transactions.

Ribbink *et al.* (2004) proposed a conceptual model (Figure 3.1) for E-quality directly influencing online trust. The concept model summarises influence factors were relate to each other, such as e-quality could have positive influence on online trust and e-loyalty directly. Their research data were collected from actual Internet vendors by using electronic questionnaire. The sample size was 350 university students.

In examining the impact of an individual's characteristics on trust formation in consumer market, researchers have developed a comprehensive list of major antecedents of trust such as disposition to trust, personal values, national culture, previous experience, attitude, subject norm, gender, age education and income (Lynch and Beck, 2001). According to Schoorman et al. (2007), online trust varies across different culture, and the relationship between culture and online trust has been observed. The impact of culture on trust formation is still in initial stages and considerable evidence is required to delineate such relationships.



Figure 3.1: Ribbink et al. (2004) Conceptual Model



Source: Ribbink *et al.* (2004) Comfort your online customer: quality, trust and loyalty on the internet. *Managing Service Quality*. Vol. 14(6), pp. 450.

Since the main goal of this thesis is to investigate the major factors on cultural that significantly impact the formation of online trust, it is necessary to look into related literature. The following section will have a critical review of published studies that investigated online trust on different culture.

### **3.5 Cultural Influence**

People are deeply influenced by the cultural values and norms they hold. Apart from trust issue, research (Jarvenpaa and Tractinsky, 1999; Pavlou and Chai, 2002; Teo and Liu, 2005) also indicates that culture influence may also play roles in attitude towards e-commerce.

Culture, which is the one of the most abstract constructs affecting human behaviour, can be described and defined in many ways. Hofstede (2001) defines culture as the “collective programming of the mind” to distinguish among people of different countries, according to social anthropology theories (p. 25). Culture is also defined as the habitual method of doing things over time. Therefore, culture is the product of learning, rather than of inheritance (Hofstede, 2001). One may conceive of culture in terms of its parts and components (Baligh, 1994). Functional segments, such as the economic system, the family, education, religion, government and social control, language and communication and transformation and technology, are commonly listed parts within a culture (Chanlat and Bedard, 1991; Culpan, 1991; Ferraro, 1990; Hall and Hall, 1990; Thomas, 1997; Chai and Pavlou, 2002). To an individual consumer, these social, economic and institutional structures and related macro environmental influences determine the overall context, or “objective reality”, in which he or she makes a purchasing decision. Beliefs, values, logic and decision rules are also basic components of a culture. They are internalised and constitute the “subjective reality” of individual consumer. People’s behaviour is not random or directionless, but instead comes from these basic components. Hence people’s behaviour is both a component and a reflection of the culture in which they are embedded (Thomas, 1997; Lee and Turban, 2001). In this sense, culture can be seen

as an underlying framework, consisting of the objective reality as manifested in societal institutions and the subjective reality which comprise socialised predispositions and beliefs that guides individuals' perceptions of observed events and personal interactions, and the selection of appropriate responses in social situations (Johansson, 1997). According to Straub *et al.* (2002), individual characteristics are formed by various social issues, such as religious, ethics and other social groups.

Although culture is abstract, it does have definite characteristics (Strauss and Quinn, 1992; Rohner, 1984). First, it is shared across members of a society. It is this sharing that distinguishes cultural phenomenon from individual phenomenon (McCort and Malhotra, 1993). "Culture may be reflected in general tendencies of persistent preference for particular states of affairs over others, persistent preferences for specific social process over others, and general rules for selective attention, interpretation of environmental cues and responses" (Tse *et al.*, 1988, p67). Second, culture is a learned phenomenon. It is manifested in learned behaviour acquired through socialisation (Ward *et al.*, 1987; Cyr *et al.*, 2005). Cultural inheritances are not genetically transferred, but instead, humans begin to acquire the mental programming (i.e. culture) from the day they are born in a social process that continues throughout their lifetime in a particular society (Hofstede and Bond, 1988; Hofstede, 2001). Humans learn norms through imitation or by observing the process of reward and punishment in a society of members who adhere to or deviate from the group's norms (Engel *et al.*, 1995, p. 613). In this sense, culture is observable and amenable to empirical description.

Meanings, values, ideas and beliefs of a social group are articulated through various

cultural artifacts, such as products, information and communication technologies (Hasan and Ditsa, 1999). Douglas and Isherwood (1979) posit that people from different cultures use products as a means of communication. According to McCracken (1986), in a consumer society, cultural meaning moves from the culturally constituted world (the original location of cultural meaning) to consumer goods (carrying and communicating cultural meaning) and then from these goods to the individual consumer. The nature of cultural influence can be seen as a circular process from which meaning is created, maintained and transmitted within a society (McCort and Malhotra, 1993).

Culture influences also include acceptable ways to process information, such as labeling, languages, and symbols (Triandis, 1991). Moreover, culture defines an individual's societal role and prescribes guiding principles to security threats reactions.

The national cultural characteristics in the present study have been selected on the basis of Hofstede's (2001) well-known model in international research. Hofstede (2001) developed his cultural value dimensions on the basis of extensive cross-national data from IBM employees in the 1960s. Each dimension ranges from 0 to 100, except for the LTO index. His cultural value system includes the following cultural dimensions: individualism– collectivism (IDV–COL), uncertainty avoidance (UAI), power distance (PDI), masculinity–femininity (MAS–FEM), and long term orientation (LTO) indices. A brief overview of these cultural dimensions should help better explain the applicability of national cultural characteristics to study the influence to the e-commerce.

According to Hofstede (1997), the definition of culture can be view as a distinct way of life, with shared values, beliefs and meaning, and with distinct subcultures and classes. There are several layers of culture, including national, regional, gender, generation, class and organisation. The author also developed four indices associated with national culture from survey of 72 countries. These factors are explained as follow:

- Individualism/ Collectivism-“the extent to which the individual expects personal freedom versus the acceptance of responsibility to family, or national groups i.e., collectivism” (Robock & Simmonds, 1989, pp. 421).
- Power distance-“the extent to which the less powerful members of institutions and organisation with in a country expect and accept that power is distributed unequally” (Hofstede, 1997, p.28).
- Uncertainty avoidance-“the extent to which the members of a culture feel threatened by uncertain or unknown situations” (Hofstede, 1997, p.113).
- Masculinity/ Femininity-“the extent to which the society differentiates roles between the sexes and places emphasis on masculine values of performance and visible achievement. Femininity stands for a preference for relationships, modesty, caring for the weak, and the quality of life” (Robock & Simmonds, 1989, pp. 422).

Individualism-collectivism is a cultural-dimension variable referring to the extent to which members of a culture tend to have an independent versus interdependent

construal of the self (Hofstede, 1980). Based on the discussion in the preceding section, the cultural dimensions of individualism-collectivism likely affect consumer intention to purchase online. Therefore, the effect of this culture dimension is considered here.

Hofstede (1997) also define the Dimension of individuality (IDV) as having two extremes, individuality and collectivism.

The features of collectivist are:

- Identify is based on social networks
- Harmony should be maintained
- High-context communications
- Trespassing leads to shame
- Relationships prevail over task
- Groups invade private life
- The dominant role of the state

The features of individualist are:

- Identity is based on the individual
- Speaking ones mind is a characteristic of honest person
- Low-context communications
- Trespassing leads to guilt
- Tasks prevail over relationships
- Everyone has a right to privacy

- The restrained role of the state

The theory of individualism and collectivism offers several insights into many of the variables that have been linked to buying behaviour, including self-identity, normative influences, the suppression of emotion, and postponement of instant gratification (Triandis, 1995).

Collectivism can be defined as a social pattern that consists of individuals who see themselves as an integral part of one or more collectives or in-groups, such as family and co-workers (Siala *et al.*, 2004). People who are more collectivist are often motivated by norms and duties imposed by the in-group, give priority to the goals of the in-group, and try to emphasise their connectedness with the in-group (Triandis, 1995; Jarvenpaa *et al.*, 2000). People in collectivist cultures often shift their behaviour depending on the context or what is "right" for the situation. Among collectivists a person is generally seen as more mature when she puts personal feelings aside and acts in a socially appropriate manner rather than in a way consistent with personal attitudes and beliefs (Triandis, 1995; Lee and Turban, 2001). Consequently, it has been found that attitude-intention (Bagozzi *et al.*, 2000; Lee, 2000) and attitude-behaviour relationships (Kashima *et al.*, 1992; Simon, 2001) are weaker in collectivist than individualist cultures.

Collectivist cultures also emphasize the control and moderation of one's emotions more so than individualistic cultures (Potter, 1988; Russell & Yik, 1996; Tsai & Levenson, 1997). For instance, the maintenance of harmony within the group is dependent on members' ability to manage their emotions. In short, culture is likely to impact an individual's emotional experiences by determining the appropriate

expression of one's feelings (McConatha, 1993). Culture influences both "feeling rules," how an individual interprets the environment, and "display rules," which emotions are expressed and how they are expressed (Ekman, 1972). For instance, people from Asian (collectivist) cultures have been found to control negative emotions and only display positive emotions to acquaintances (Gudykunst, 1993). Given that impulsiveness is related to sensation-seeking and emotional arousal (Rook, 1987; Weinberg & Gottwald, 1982), it is likely that people in collectivist cultures learn to control their impulsive tendencies more than people from individualist cultures. In fact, children in collectivist cultures are socialised to control their impulses at an early age (Ho, 1994).

Triandis (1995) also defines individualism as a social pattern that consists of individuals who see themselves as autonomous and independent. People who are more individualist are motivated by their own preferences, needs, and rights, give priority to their personal goals, and emphasize a rational analysis of their relationships with others (Triandis, 1995; Gefen, 2000). These social patterns are expected to influence impulsive purchasing behaviour through their affect on a person's self-identity, responsiveness to normative influences, and the need (or lack of need) to suppress internal beliefs in order to act appropriately. In individualist cultures, Rook (1987) found that people often ignore the potential negative consequences of their impulsive buying behaviour referring to focus on the positive consequences of their actions and on their own feelings and goals.

This may not be true for people from collectivist cultures, who are more likely to focus on the potential negative consequences of their behaviour and the effect of their actions on in-group members (Shankar *et al.*, 2002; Triandis, 1995). The greater



likelihood that people in collectivist cultures will consider the negative consequences of their actions makes the suppression of the impulse trait-behaviour relationship more probable.

These differences between individualists and collectivists are best explained by examining the tenants on which the cultural patterns of individualism and collectivism are based. As Kim *et al.* (1994) explained Western individualist societies are based on the tenant of liberalism. In these societies individuals are encouraged to be rational and are given individual rights to define their own goals and choose freely. Conversely, East Asian collectivist societies are based on Confucianism, which promotes common goals and social harmony over individual interests (Tan and Ouayng, 2004). Within each society these differences are reinforced at the cultural level through social institutions such as schools, workplaces, and families, so that even very ambitious (i.e., more individualist) people who grow up in Eastern cultural background are likely to be better at controlling their impulses and emotions than very family-focused (i.e., more collectivist) people from the Western cultural background.

Culture influence and business are linked in numerous studies from different aspects. Each research is focused upon particular areas and nations. From information technology area, Raman *et al.* (1997) found that most information system knowledge is based on US research and may not be applicable in other countries, such as culture difference in professional discussion and organisational cultures. In another study, Ein-Dor *et al.* (1993) identified the national cultural factors in I.T area, including attitude towards technology process, interpersonal relations and social commitment. These factors were important to this research, and assisted in understanding and

describing the difference among nations. Many of the early system failed from a lack of understanding and cultural sensitivity, the same social drivers may dramatically alter the development of e-commerce.

Hill *et al.* (1998) also conclude an interview survey with Arab-American business community with five Arab nations and they found that social-cultural factors are powerful and strong identification of Arab culture. Other research finds different outcomes. McLeod *et al.* (1997) had different survey result of the effects of culture on IT from Hofstede's concept. They conducted interview and questionnaire survey about the influence of national culture on the role of perceptions with 67 Chief information officers from Korea, Mexico and US. This study had tested the dimensions of power distance, uncertainty avoidance and individualism. According to Hofstede's survey, Mexico, a nation with high ranks on power distance and should favour a centralised management structure. The results indicate that this is not so.

One of the earliest studies of cross-cultural survey was done by Jarvenpaa and Tractinsky. Jarvenpaa and Tractinsky (1999) report on a cross-cultural validation of an Internet consumer trust model and this research conducted an Internet survey in Australia and Israeli. The study included 198 Israeli university students and 184 from Australia. However, the research did not find significant cultural differences in the antecedents of trust due to possible sampling bias and the insensitive measure of culture and trust issues. Nelson & Clark (1994) defines cross-cultural research as the systematic study of the development, operation, use and impact of an information system in an organisation environment in different cultures.

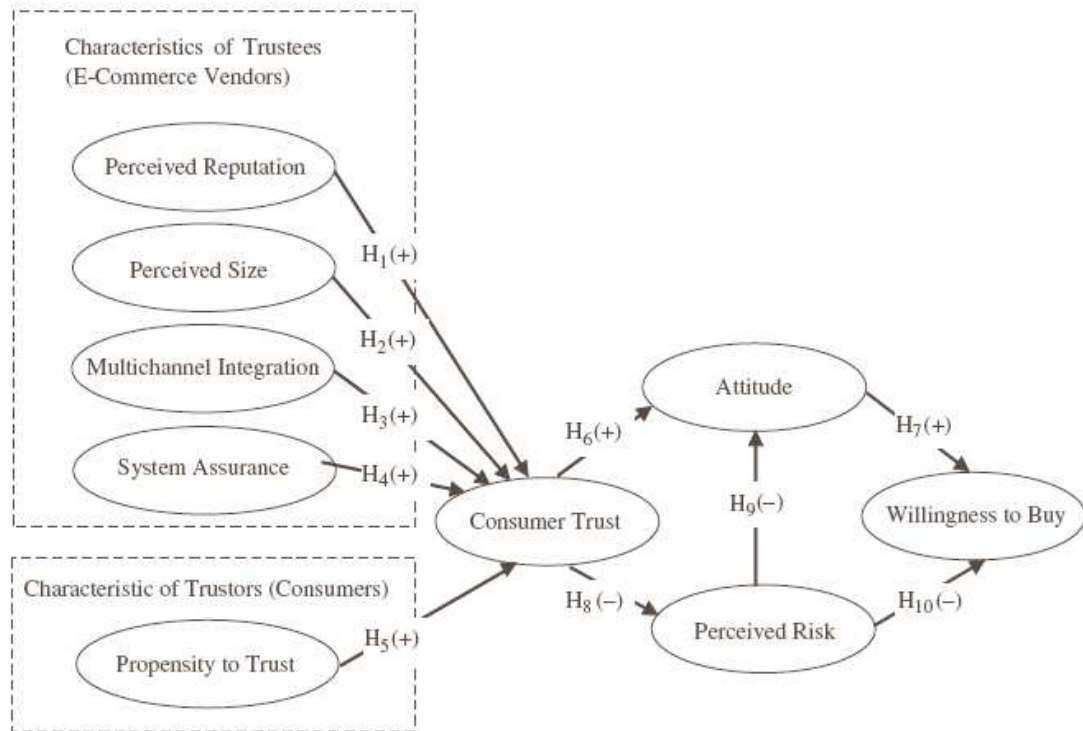
Chai and Pavlou (2002) found that trust directly influences consumer attitude across

cultures. This research used an experiential online survey and conducted in the US and China by randomly selected from the Internet. Data collected from total 1500 email in both countries and the response rate was approximately 8% (55 from US and 58 from China) overall.

Teo and Liu (2005) had developed a propose model (Figure 3.2) for examining the antecedents and consequences of consumer trust. This study identified ten hypotheses to link determining factors in the research model, including perceived reputation, perceived size, multi-channel integration, system assurance, propensity to trust, consumer trust, attitude, perceived risk and willingness to buy. By testing this model, they used an online survey for general Internet users from three countries: US, China and Singapore. The survey questionnaire was divided into three sections: online purchasing experience, type of product bought from the Internet and demographic background. The biggest respondent was from Singapore (1381), followed by China (988) and the US samples (544). The survey results found that perceived reputation, system assurance and propensity of trust are the determinants of consumer trust. Also, the results have similar loadings across these countries.

However, there is a lack of research of cultural effects on trust and its importance for e-commerce (Ribbink et al., 2004). Doney *et al.* (1998) stated that the importance of national culture on trust requires a further investigation. Fang and Yen (2006) also mentioned that cross-cultural comparison of Internet users' behaviour would be another interesting area to conduct future research. And only few studies found that trust seems to work almost the same in different culture (Jarvenpaa & Tractinsky, 1999; Gefen et al., 2005). Little research has been conducted that examines cultural implications on trust and security issues in e-commerce.

Figure 3.2: Teo and Liu's Research Model



Source: Teo and Liu (2007) Consumer trust in e-commerce in the United States, Singapore and China.

*Omega*. Vol. 35, pp. 24.

Culture influence is tightly associated with political and social initiations, it raises the question that if internet users of China, Taiwan and Hong Kong still share the same culture values and online trust similarly after decades of political animosity and diverse economic development. Therefore it is reasonable to assess the impact of culture on online trust and use of Internet across China, Taiwan and Hong Kong.

### 3.6 Chinese Cultural Influence

National culture was important to this study as argued in the literature since it is a major factor in any research of e-commerce development. Different national culture characteristics and social economies have created a significant level of variation in the trust of e-commerce in different regions of the world.

According to the survey conducted by Hofstede and Bond (1998), the classical features of Chinese society culture were:

- High power distance
- Strong uncertainty avoidance
- Long term orientation
- Collectivism
- Femininity

According to Hofstede (2001), individualism is defined as the degree of affiliation a given person portrays toward other individuals in society or the extent to which people care about themselves vs. other groups of people in their given environment. Characteristic of most East Asian societies, China, Hong-Kong, and Taiwan have relatively low scores in individualism, compared with the US, China has an individualism of 20, while Hong- Kong has an individualism of 17. Taiwan has an individualism of 25 (Table 3.2). As a result, all three societies can be categorised as collectivistic cultures. People from less individualistic societies do not want to stand out, be different then the rest of the group, and place less emphasis on individual success and achievement.

Table 3.2: Hofstede's cultural values of China, Hong-Kong, and Taiwan

	Individualism	Masculinity	Uncertainty Avoidance	Power Distance	Long-term orientation
China	20	66	40	80	118
Hong Kong	25	57	28	68	96
Taiwan	17	45	69	58	87

Sources: ITIM International (2005), [http://www.geert-hofstede.com/hofstede\\_dimensions.php](http://www.geert-hofstede.com/hofstede_dimensions.php).

Uncertainty avoidance index refers to the level of tolerance for ambiguity and uncertainty within a society (Hofstede, 2001). In other words, this cultural dimension deals with how societies cope with unanticipated and unexpected situations (De Mooij, 1998; Hofstede, 2001). Taiwan has the highest score in uncertainty avoidance (69), compared with China (40) and Hong-Kong (28). Hofstede (2001) argued that, in a high uncertainty avoidance culture, there is much formality in all processes. Furthermore, rules tend to be very strict to avoid ambiguity (Hofstede, 2001). On the other hand, people from a society with weak uncertainty avoidance, they are more open to take risks and anticipate challenges and innovations in their life (De Mooij, 1998).

Long term orientation is developed by Hofstede (2001) to study the manifestation of East Asian cultures. This cultural dimension refers to the level that a society embraces, or does not embrace, values such as history, tradition, or forward-thinking values. China has the highest long term orientation of 118, compared with Hong-Kong (96)

and Taiwan (87). A society with a high long term orientation (such as China) emphasises the value of long-term commitment to values and traditions, compared with a society with a low long term orientation.

Although Taiwan and Hong Kong also have a low individualism, compared with other Western countries, political and economic developments have moderated the impacts of cultural characteristics on the policymaking process. While Hong Kong has adopted the UK cultural background, Taiwan follows the US footsteps in its economic reforms and Western democracy environment (Peng, 2007; CSD, 2008).

According to Johnston and Johal (1999), the way of content interpretation and Internet use is closely related to national culture. The development of mutual trust across China, Taiwan and Hong Kong is more complex because of long term political, social disconnection and diverse economic development.

On the basis of Chinese society in these regions should share a homogeneous value system. However, Mainland China and Taiwan have been ruled separately in communist and democratic institutions for more than fifty years, further Hong Kong was ruled by United Kingdom for a century (Kelly *et al.*, 2006). All these political and social issues may impact the culture development of these Chinese societies. According to Huang and Dastmalchian (2006), the effect of cultural difference in these three regions has been identified and suggested that China, Taiwan and Hong Kong are different societies with diverse characteristics. Thus, the cultural difference across China, Taiwan and Hong Kong is important to the extent that it influences the adoption of e-commerce.

On the basis of Hofstede's (2001) cultural value framework, Chinese society is characterized by its low individualism (20), medium masculinity (66), low uncertainty avoidance (40), high power distance (80), and high long term orientation (118) indices. These national cultural characteristics have been demonstrated in e-commerce in China.

Cheung and Lee (2001) propose a conceptual model of trust and risk in e-marketing. The research was carried out in the City University of Hong Kong and sample size is 400 business students. According to this research, several factors could influence the e-commerce trust were:

- Consumer propensity to trust
- The vendor's trustworthiness
- Nation's legal framework
- Nation's culture environment
- Prior positive experience

This study had confirm Hofstede's survey result and indicate that people with different cultural backgrounds, personality types and development experiences vary in their propensity to trust, however the culture environment influence and experience differences are not considered in their works. Hofstede's (1991) survey also rank different individualism and collectivism which include the United States (individualism score = 91) and Australia (90) as highly individualistic countries and Singapore (20), Malaysia (26), and Hong Kong (25) as highly collectivist countries.

Although using cultural region as an indicator of individualism and collectivism



offers the advantage of capturing the more complex nature of the construct, it also includes the disadvantage of adding between-country variance to the often problematic within-country variance found in cross-cultural research. On the other hand, using people's self-concept as an indicator of their level of individualism and collectivism measures the within-country variances, recognizing that each person internalizes national and institutional influences to a greater or lesser extent, but it fails to pick up the more complex nature of the construct. Using an individual level measure of culture in addition to a regional or national level measure adds confidence that the results are due to the construct of culture regardless of its measurement (Maheswaran & Shavitt, 2000; Schwartz, 1994; Singelis & Brown, 1995; Triandis, 1995; Siala *et al.*, 2004).

Tan and Ouayng (2004) indicated the privacy of data and security issue as one of top obstacles to e-commerce diffusion from their survey result. The research was based on the results of the Center for Research on Information Technology and Organisation (CRITO) Global E-Commerce Survey in 2002 and the survey conducted in ten countries, including Brazil, China, Denmark, France, Germany, Japan, Mexico, Singapore, Taiwan and the United States. The Chinese sample comprises 204 establishments with different sectors from four major cities: Beijing, Shanghai, Guangzhou and Chengdu. They note that Chinese firms were more serious concern about this issue than any other countries due to the poor credibility monitoring system both for vendors and consumers. With the current popularity and the potential profits of e-commerce, many executives face a conflict situation. That is, connecting to the Internet and expanding their business would risk the threat of intrusion. On the other hand, remaining disconnected from the Internet would sacrifice their customer contact and services.

According to Efendioglu and Yip (2004), some of significant Chinese cultural characteristics had been included:

- Lack of transaction trust – payment will be made only when the purchased goods arrived. Chinese rely on physical and tangible contact than other culture.
- Bargaining favourite – Chinese are used to negotiate to get the best deal and willing to use different tactics to achieve it. The features of Chinese negotiation are: well preparation, tough mind and patient.
- Strong socialisation effect – During the business process, a strong individual relationship and long term association will guarantee the success of doing business in China.

The Efendioglu and Yip's (2004) survey was conducted in China with total 252 respondents from major cities, including Beijing, Shenzhen, Guangzhou, Wuhan and Shandong. They develop a survey result of comparison between their survey and China Internet Network Information Center (CNNIC) study in 2003. Some of result figures were different, such as education level, major age group, e-commerce participated rate and payment method. This finding represents that Internet users in China was changing time to time, and the unique and cultural characteristics of China pose a greater challenge as the major impediments to e-commerce development in China.

Using a secondary data analysis approach, Fang and Yen (2006) classified the most

widely cited problems of e-commerce in China into seven categories:

1. Online purchasing security cannot be guaranteed
2. Inconvenient methods of payment
3. Uninsured quality of product and service
4. Obstructed delivery channel
5. Unattractive price
6. Unreliable information
7. Miscellaneous problems

The study suggested that by improving the sales on the Internet and enhancing consumer satisfaction, the priority is to concentrate on Internet security and quality of products and services sold online. However, the authors acknowledge the limitation of research base on analysing data from China Statistical Yearbook 1994-2003 and China Internet Network Information Center (CNNIC, 2009). Primary data collection and selection were lacking and this could be considering a further research in future.

The nature of the Chinese cultural influence is dictated by industry. According to Hofstede and Bond (1988)'s research, Chinese culture is rated as relatively high on the dimensions of power distance and uncertainty avoidance, high on dimensions of collectivism and long term orientation and relatively low on the dimension of masculinity compared to other regions.

The collectivistic cultural characteristics often reflect the importance of relationship in interpersonal relationships. Benefits for members in the inner group are often placed more emphasis than those as outsiders (Hofstede, 2001).

Three Chinese majority societies in the Greater China Region (i.e. China, Hong-Kong, and Taiwan) have demonstrated that diverse political, economical, and social priorities have evidently interacted with these cultural characteristics to shape their buying behaviour through culturally determined perceptions of issues related to the development of e-commerce.

Since past studies suggested that national cultural characteristics may influence the perception of different uncertainty concerns and implementation of various e-commerce processes (Wang, 1999; Gefen and Heart, 2006), the author argues that these perceptions may influence people responses to using the e-commerce and perceptions on e-commerce trust.

In addition, China differs from western countries greatly in cultural tradition, logistic infrastructure and credit system. Chinese culture belongs to eastern culture system, and the infrastructure of logistics in China lags behind other developed countries. Moreover, there was not sound credit system in China. Prior researches indicate that culture (David, 2007), logistics (Sharma et al., 1995) and credit (Gentry, 1982) have important impact on customer behaviour and satisfaction. Therefore, it is understandable that key drivers of online shopping customer satisfaction in China may be different from that of other countries. Just as de Mooij and Hofstede (2002) indicated, converging technology and disappearing income difference across countries will not lead to homogenization of consumer behaviour. Rather, consumer behaviour will become more heterogeneous because of cultural differences (de Mooij and Hofstede, 2002). Few studies, however, have explored online shopping customer satisfaction on Chinese context, so little is known about the construct of Chinese online shopping customer satisfaction.

### **3.7 Other Factors**

There are many other issues affecting e-commerce aside from online trust, such as user's Internet experience, word of mouth, web site quality and size, purchasing behaviour, consumer attitude, consumer loyalty, product perception (Jarvenpaa et al., 2000; Tan, 1999; Ranganathan and Ganapathy, 2002; Park and Kim, 2003; Elliott and Speck, 2005; Reichheld and Schefter, 2000; Jarvenpaa and Todd, 1996). For example, Chinese consumers generally held a favourable attitude towards products manufactured in developed countries rather than in developing countries. Zhang (1996) has confirmed that Chinese consumers are likely to use country-of-origin information to evaluate products and to make purchase decisions.

These factors are clearly important in e-commerce study. However, this study focuses on the combination of online trust and security issues on the unique aspects of cultural influence in e-commerce, the expanding research study which being significant in e-commerce could provide a valuable contribution to industry and academic.

### 3.8 Research Model

This research model is design base on Mayer *et al.* (1995) and Teo & Liu (2007) proposed model for examining the antecedents and consequences of consumer trust. The Technology Acceptance Model (TAM) (Davis, 1989) which is the central to this research model. This Technology Acceptance Model proposed by Davis (1989), was developed to explain why people adopt technology. Davis (1989) stated the purpose of the model is to “provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behaviour across a broad range of end-user computing technologies and user populations” (Davis, 1989).

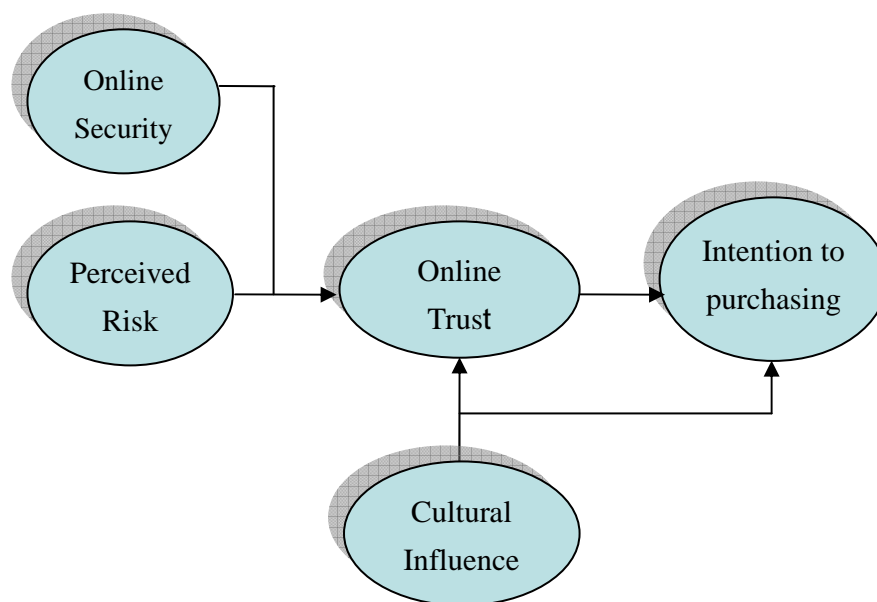
Furthermore, the Technology Acceptance Model was derived from the Theory of Reasoned Action (TRA), and is widely regarded as a relatively robust theoretical model for explaining information technology use (Straub, *et al.*, 1997). In this model, perceived usefulness and perceived ease of use are considered the most important variables in explaining and predicting the use of information technology (Henderson and Divett, 2003).

Figure 3.3 presents in a schematic format the conceptual framework linking culture influence and elements of the theory of attitude to the adoption of e-commerce. This model suggests different factors affects intention to engage in trust and attitude, such as culture influence toward the risk perception. This research also investigated the relationship among online trust and online security towards e-commerce, and affected by the factors of cultural influence and risk perception. A dependent variable is a variable dependent on another variable: the independent variable. In simple terms, the independent variable is said to cause an apparent change in, or simply affect the

dependent variable (Dodge, 2006). In this study, the independent variables were online security, perceived risk and cultural influence, while the dependent variables were the online trust and purchase intention.

Online trust is central to online shopping intentions (Lee and Turban, 2001; Goode and Harris, 2007). Security issues (safety of the computer and financial information) and privacy (individually identifiable information on the internet) are closely related to online trust (Jones and Vijayarathy, 1998; Bart *et al.*, 2005).

Figure 3.3 Research Conceptual Model



Subjective norm refers on one hand to beliefs that specific referents dictate whether or not one should perform the behaviour or not, and on the other the motivation to comply with specific referents (Ajzen and Fishbein, 1980). In other words, these are

social factors, which mean the influences of others on purchase intentions. For example, TRA (theory of reasoned action) argues that whether our best friends think that we should make a particular purchase influences our intention (Ajzen and Fishbein, 1980). Numerous studies of traditional shopping have drawn attention to these aspects (Dennis, 2005). Social influences are also important for e-shopping, but online vendors have difficulty in satisfying these needs (Shim et al., 2000). Rohm and Swaminathan (2004) found that social interaction was a significant motivator for online shopping. Similarly, Parsons (2002) found that social motives such as social experiences outside home, communication with others with similar interests, membership of groups, and status and authority were valid for e-commerce. Social networking sites can link social interactions concerning personal interests with relevant e-commerce which mentioned in previous chapter, thus:

The expected relationships are summarised in the following hypotheses:

- H1: Cultural influence indirectly affects consumers' intention to adopt online purchasing through consumer attitude.
- H2: Online security indirectly affects consumers' intention to adopt online purchasing through online trust.
- H3: Cultural influence indirectly affects consumers' intention to adopt online purchasing through online trust.
- H4: Perceived risk indirectly affects consumers' intention to adopt online purchasing through online trust.



### 3.81 Measurement of the Variables

*Online Trust:* Online trust was measured with four items: (1) trustworthiness of online vendors, (2) information reliability, (3) products match the description with on-time delivery, and (4) ease of contacting customer service. The online trust can be measured using 5 point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was adapted from Gefen (2000) and Jarvenpaa *et al.* (2000) but it consisted two separate item (propensity to trust and consumer trust).

*Online Security:* Online security was measured with three items: (1) confidentiality of personal information, (2) system assurance, and (3) security of credit card information. The extent of online security was assessed on a 5 point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument was adapted from Kini and Choobineh (1998). The culture has influenced the formation of many security measures, such as national security policy, information ethics, security training, and privacy issues. Therefore, it is imperative to incorporate the culture into the design of IT applications (e.g. security awareness training systems) in order to improve their perceived values (Agrawal *et al.*, 2003) and adoption (Montealegre, 1998).

*Perceived Risk:* Perceived risk items were modification of scales used in previous research (Furnell & Karwenii, 1999). Consumers perceive online shopping to be higher risk than traditional store (Tan, 1999). Perceived risk was measured with three items: (1) risk of online purchasing, (2) uncertainty avoidance, (3) ordering or delivery concerns. A 5-point Likert-type scale from 1 (strong disagree) to 5 (strongly agree) was used.

*Culture Influence:* Culture influence is said to have four dimensions: (1) individualism/ collectivism, (2) power distance, (3) uncertainty avoidance and (4) masculinity (Hofstede, 1997). This study focused on the collectivism and uncertainty avoidance in measuring culture influence. Subjective norm, or the influence of others, has also been found to affect consumers' willingness to adopt a technology. Taylor and Todd (1995) reported that subjective norm positively affects consumers' adoption of innovative products. Green (1998) found that normative pressures have a significant positive effect on technology acceptance. Culture influence was measured with three items: (1) word of mouth, (2) social factors, (3) purchasing attitude. A 5-point Likert-type scale from 1 (strong disagree) to 5 (strongly agree) was used.

*Others:* A measurement of purchase intention at the Internet included a 5-point Likert-type scale from 1 (never buy) to 5 (must buy) was used. Online shopping experience measured by purchasing frequency on the Internet included a 5-point Likert-type scale from 1 (never buy), 2 (once per year), 3 (2-5 times per year), 4 (6-10 times per year) to 5 (more than 10 times per year). This measurement scale was a modification of previous study (Jarvenpaa and Tractinsky, 1999; Hoffman, 1999).

### **3.9 Summary**

Despite the proliferation of e-commerce research during the last few years, most of literature is dominated by empirical studies in the developed countries of European and US. Little is known, about e-commerce in developing countries, especially in China. There is general lack of research on e-commerce in the China but there are more studies in other area in Asia, such as Korea and Japan. One possible reason for this lack of research is that e-commerce in China is still at an early stage of development. However, the continual growth of e-commerce raises the need to understand more about the development of e-commerce in developing countries, especially identifying factors that affect their success.

As the culture and trust issues identified by the literature as potential factors affecting the development of e-commerce, this study therefore aims to examine this proposition and to fill in the gap in the e-commerce study. China, Taiwan and Hong Kong are chosen as a representative of developing countries due to the continual growth and development of e-commerce there. Such research would be beneficial in that identifying critical success factors for e-commerce that may guide e-commerce ventures in developing countries to conduct successful e-commerce, as well as helping those in developed countries that plan to expand into developing countries' markets.

This chapter began with an introduction of theoretical background of e-commerce from two perspectives: B2B and B2C. The chapter also reviewed the literature on different factors that could influence the development of e-commerce: Internet security, online trust and cultural influence. The review of the literature revealed that

e-commerce has become common practice in a number of countries, such as the USA, UK and China.

The following chapter considers the methodology adopted in this study. The research is undertaken in three parts: reviews the concept and theory of research methodology, preparation for data collection and questionnaire survey.

## **CHAPTER 4**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

The purpose of this chapter is to explain the research methodology and to describe the procedure adopted for data collection. This chapter is divided into two parts. The first part reviews the concept and theory of research methodology, focusing on research method and strategy with a view to identifying an appropriate approach for this particular research. The strengths and weakness of qualitative and quantitative approaches and their appropriateness in certain situations are discussed. Also, the given issues of the validity and reliability of research methods are included.

Section 4.5 research model also present the structure of this thesis, including a framework with hypotheses and research questions to be further investigated and tested in chapter 6.

The second part is to describe the procedures of collecting data and reason for why this method had been chosen. It covers the process of data collection and adoption for each stage, including pilot questionnaire survey and final questionnaire.

## 4.2 Research Methodology

According to Che Rose's work (2002), research methodology means the way in which a research study is designed and the procedures by which data is analysed. There are various research methods that can be used, such as questionnaire survey, personal interview, case studies and group observation. Each method has its own strengths and weaknesses and the choice of the method for particular research will depend on different factors, for example the research objectives and purpose of research, time, research resources and cost limitation (Denzin, 2006; Yin, 1989).

There are two fundamental types of research in general: descriptive research and explanatory research. The descriptive research focuses on *What* question and the explanatory research places emphasis on *Why* question (Strauss and Corbin, 1994; De Vaus, 2002; Denzin, 2006). The former research type is widely used, for example, by government sponsored research to collect social indicators and economic information, such as household expenditure patterns, and employment statistics. The latter research type is commonly used to develop explanations about *Why* questions. The way in which the research conducts his/her research is dependent on whether its aim is descriptive or explanatory, whether the research seeks to answer *What* or *Why* questions. However, a research study may first focus on *What* questions in reality, and then seek answers to *Why* questions by examining hypotheses through empirical data. The present research's aim is to investigate the cultural influence on consumers' trust in e-commerce. Since e-commerce is not familiar with every Internet user, the study first considers possible incentive for e-commerce, examines the reason for not using e-commerce, and then investigates factors influencing consumers' decision to undertake e-commerce by testing hypotheses through empirical data (Hakim, 2000).

The explanatory research includes two processes: theory building and theory testing (Berg, 2001; De Vaus, 2002). Theory building begins with observations and uses inductive reasoning to develop theories based on these observations. This approach is also known as grounded theory (Finch, 1986). In contrast, theory testing starts with a theory and uses deductive reasoning to obtain a set of propositions from theory to predict how things will be in the real world. According to De Vaus (2002), although theory building and theory testing are different research approaches, they should be part of one ongoing process, since there is a constant interplay between them.

### 4.3 Quantitative Research Method

Questionnaires as a quantitative research method is widely used in management and business research, and are regarded as being inherently quantitative. According to De Vaus (2002), the distinguishing features of surveys are the form of the data and the method of analysis, which allow researchers to find the differences systematically linked with them. He also mentions that quantitative survey research is sometimes regarded as sterile and unimaginative, but is well suited to providing certain types of factual, descriptive information. Survey research is criticised for being incapable of catching the meaningful aspects of social behaviour (Che Rose, 2002; Dixon-Wood *et al*, 2004).

Quantitative method has its own strengths and weaknesses; the choice of a research method is really dependent on the research questions and process. For example, quantitative methods are more useful when trying to test hypotheses.

This research involved a combination of quantitative and qualitative data collection. It is common to combine quantitative and qualitative methods in management and business research. According to Jick (1979), a combination of methodology can improve the accuracy of data collection from different kinds of fields. Also, collecting different types of data from different sources would broaden the researcher's unit of analysis under study (Bonoma, 1985; Denzin, 2006). Bulmer and Warwick (1993) suggested that using various data collection methods is very helpful for locating research data in specific field.

To achieve the objectives of this study, the specific research method were conducted.



In this research, a quantitative research method will be utilised namely, questionnaire survey to ensure the validity and reliability of data. Online questionnaire was the research method for quantitative approach and it had been widely used in social science research. The distinguish features of surveys are the form of the data and the method of analysis, which allows the researchers to find differences in particular case (Marlands *et al.*, 2000; De Vaus, 2002).

#### **4.4 Validity of the Research**

There are two dimensions to validity which are internal and external. Internal validity refers to the degree of certainty that observed effects in an experiment are actually the result of the experimental condition or cause, rather than intervening, extraneous, or confounding variables. In other words, it can be concluded that whether the independent variable produces the differences observed (Dixon-Woods *et al.*, 2004). A research study has internal validity if the research design sustains the causal conclusions that the researcher claims for it. De Vaus (2002) describes internal validity as the extent to which the structure of a study instrument enables the researcher to draw clear conclusions from the results. Therefore, the more the structure of a study eliminates alternative interpretations for findings, the stronger its internal validity.

External validity is concerned with the degree to which research findings can be applied to the real world, beyond the controlled setting of the research. This is the issue of generalisability. There are two types of generalisation: statistical and theoretical (Casebeer and Verhoef, 1997; De Vaus, 2002). Statistical generalisation can be obtained by using representative random samples and its results can be applied to a wider population. Theoretical generalisation involves generalising from a study to a theory, rather than to a population. It relies on the logic of replication. The logic of replication lies at the heart of experimental and case study research (Yin, 1989; Che Rose, 2002). Cohen and Manion (1980) indicated that an experiment cannot be externally valid without internal validity, but an internally valid experiment may or may not have external validity. In other words, a study may have good internal validity but its results may not apply to other groups, settings and situations.

According to De Vaus (2002), there are three basic ways to assess validity:

- Criterion validity
- Content validity
- Construct validity

Criterion validity is built when the way people rate the new measure is consistent with established measure. However, criterion validity has two limitations: first, the established benchmark has to be valid, and second, there are no established measures for many social science concepts. Content validity assesses how well the measures tap the different aspects of the concept as defined (Denzin, 2006). However, it is difficult to develop measures that have agreed validity given the disagreement about the content of many social science concepts. Construct validity refers to how well the result obtained from the use of the measure fit with the theoretical expectations (Leung, 2001). Nevertheless, the approach relies on the correctness of the expectations. In fact, there is no ideal way of testing validity and the validity of a measure depends on how a researcher defines the concept that is to be measured (Marsland *et al.*, 2000).

In practice, the measurements often include errors; people can answer a question one way one day and provide a different answer the next day, which calls into question the reliability of the measurement used. If the same result can be obtained on repeated occasions, that is a reliable measurement. Further, different researcher may pose questions differently which may cause respondent to understand the same question differently on different occasions (Leung, 2001).

In addition, the way different researchers interpret results may vary from one to another. There are three ways to assess reliability (De Vaus, 2002):

- The test-retest method
- The split half method
- Use of the alpha coefficient of reliability

The test-retest method uses the same measure twice on the same people to see whether the second measurement is similar to the first one. If the measure is reliable, the second measurement should be the same as the first measurement. Unfortunately, it is difficult to give the same test to the same sample twice using the test-retest method. Also, memory is another problem since people can artificially answer a question in the same way the second time as they may remember their answer from the first occasion (Marland *et al.*, 2000).

The split half method refers to splitting the instrument in half, forming two separate scores, and then comparing scores for each individual to specify compatibility (Malhotra, 2009). The third method, the alpha coefficient of reliability, measures the reliability of a test in terms of its internal consistency. Alpha reliability has values from 0 to 1. In general, 0.6 is regarded as the minimum acceptable level for the alpha value. Due to difficulty in contacting the same people twice, the Alpha reliability method is used in this study to assess the reliability of questionnaire surveys. The questionnaire attained alpha values of 0.73, respectively, which is considered acceptable.

#### 4.5 Data Collection Process

The process of data collection was divided into two stages: the first stage was a pilot study (questionnaire survey), which was completed in one month from April 30<sup>th</sup> 2008 to May 30<sup>th</sup> 2008. The second stage involved final questionnaire survey, which was conducted in two months, from June 1st 2008 to July 31st 2008.

As previously mentioned, the aim of this study is to examine the cultural influence on consumers' trust in e-commerce. Although case studies and interviews can provide detailed information, these methods are based on a small sample size, which makes it difficult to make a statistical generalisation about the population from which it was selected (Hakim, 2000; Hoinville & Jowell, 1989). Further, case studies are time consuming and relatively costly. Due to time, cost and resource constraints, a web questionnaire was selected as a main method in this study. This selection of questionnaire rather than other methods can be justified by the following statement:

*“Questionnaire-based surveys should only be used when quantified information is required concerning a specific population and when individuals' own accounts of their behaviour and attitudes are acceptable as a source of information.”* (Ticehurst and Veal, 2000, p. 49)

The main advantages of using questionnaire survey are low cost and efficient (Hakim, 2000). First, it normally costs no more than a third of what a comparable interview survey would cost. The expense of large sample interviewing is too expensive for a research student budget. Moreover, for the same cost, the sample size for a questionnaire survey can be perhaps three times as large as that for an interview

survey (Hoinville & Jowell, 1989). Secondly, the questionnaire survey can reduce interview bias. Many studies have suggested that interviews pose serious problems of reliability and validity (Misher, 1991; Haralambos, 1986). Haralambos (1986) noted that due to the fact that interviews are usually considered interactive situations. Therefore, the results of an interview will depend in part on the way participants define the situation and the way an interviewer conducts the interview. Bias may arise from the way that questions are posed; the form of probing for answers; the recording of answers and incorrect coding (Solomon, 1999). These problems can be tackled by using a questionnaire. Another advantage of questionnaire survey over other methods is the ability to reach a wide geographic area, particularly isolated areas, and those members of population whom interviewers would find it difficult to access. Moreover, replies can anonymous, encouraging respondents to feel free in answering questions and giving them time to think about their responses in private.

However, there are several problems associated with using questionnaire survey (Hakim, 1992). A major problem is the low response rate. The response rate obtained partly depends on the topic under investigation, the nature of the sample, and the length of the questionnaire (De Vaus, 2002). The problem of item non-response is another related problem. Non-response can arise for a variety of reasons; for example, unclear question, difficult, sensitive and controversial to answer. As a result, this study uses a pilot study in attempt to reduce the likelihood of item non-response. Another concern associated with using questionnaire survey is the quality of answers. If a question is left blank, the researcher will not know why and cannot go back and clarify if the question asked appeared ambiguous to the respondents. Also, response error may arise of respondents misunderstand the question. However, conducting a pilot study can lessen these problems. The questionnaire survey is not suitable for

asking open-ended questions and obtaining spontaneous answers. These problems can be easily tackled by interviews; however, this research does not require spontaneous answers. Further, no observable data and language differences are other problems when using questionnaire survey.

Furthermore, this study used a Web-based survey instead of using paper questionnaire survey. Web-based surveys have many advantages over traditional methods, such as more convenient and accurate to the target group with low cost budget. Web-based survey has advantage of design flexibility. It can take advantage of the graphic power available through programming languages such as HTML and JavaScript to create an attractive and compelling survey to invite more respondents (Sheehan, 1999). Kehoe & Pitkow (1996) stated that the web-based survey also allows to using adaptive questioning, which means that the questions that a respondents is ask depend on his/her answers to previous questions. This allows for follow-up questions that can enrich responses as well as easier navigation for respondents. Time saving is another advantage of web based survey and high volume of responses can be collected very quickly compare to the traditional method (McCullough, 1998). Several hundred responses can be generated over a short period.

The cost efficient is another advantage of web-based survey. The cost of data collection and analysis can be minimised by using the web-based survey (McCullough, 1998). The actual implementation of a survey can be almost free with no costs for paper or postage. The web-based survey can also use anonymity for the respondents to increase response rate. According Greenberg's research (2005), the anonymity may affect response rate positively, as respondents may be more willing to respond without fear that their answers may be identifiable to them. Web-based

surveys allow for anonymity in responses, since the respondent can choose whether to provide his/her own personal details.

However, there are some limitations to Web survey that researchers must recognise before adopt this method. The first limitation is the generalisation of the survey result. According to David (2000), unequal opportunity and self-selection to participants are the two major concerns for using web-based survey. Web-based surveys might attract respondents to the web page with messages posted in news groups, links on other web pages, banner ads and other types of methods. As a result, all segments of the Internet population may no be represented in the sample (Kehoe & Pitkow, 1996). For example, some web-based surveys are announced in a particular newsgroup, if potential respondents are not a frequent visitor to the newsgroup, they may not be aware of the survey announcement posted and may not have the opportunity to complete the survey. As a result of survey, those who are interested in and fill out the survey might not represent the target population (Greenberg, 2005).

The low response rate can also affect the generalisation of the survey results. Although web-based survey can generate a large number of responses, the number of real respondents is extremely small compared with the total number of online users who are informed about survey (David, 2000).

An inappropriate and multiple responses is another limitation of web-based survey. Web-base survey generally allows for multiple responses from a single individual, as well as responses from individuals outside of the group of interest. This could generate bias in the survey results (McCullough, 1998).



Even though only respondents who are able to access the Internet are able to participate in this survey, and this bias is exactly what is desired of the data for respondents of this study since it provides the data related to the actual Internet users. This is the main reason why a Web-based survey was chosen.

## 4.6 Question Construction

When constructing the questions for the questionnaire, there were two types of questions: open ended and closed ended questions (Ticehurst and Veal, 2000). Open ended is one where the respondents write down the answers in their words in a line or space. Closed ended question also known as close question, which is the one contain with range of alternative answers is set out in the questionnaire and the respondents are asked to tick or circle the appropriate boxes. However, there is no agreement as to which style is preferable and it all depends on research questions.

Closed ended questions are usually quicker and easier to answer as they require minimal writing (Ticehurst and Veal, 2000). Moreover, it is easy for researcher to analyse since the possible responses already categorised. As they provide a certain categories, respondents can reply questions asked by researcher correctly and help to ensure that the information needed by the researcher. However, the major disadvantage of this type of question is that the information obtained lack of depth and variety. Moreover, according to Kumar (2005), there were greater possibilities of investigation bias arise since the researcher may only list the response patterns that he or she is interested in or those that come to mind.

In opposite, the advantage of the open ended questions is that the investigator does not influence the respondent's answer unduly. According to Ticehurst and Veal (2000), the verbatim replies from respondents can provide a rich source of varied material. However, there are three disadvantages of open ended questions:

- Analysis of such questions is more difficult

- Response rate to open ended questions can be very low because people are often too lazy or too busy to write out full length answers (Ticehurst and Veal, 2000)
- While such questions provide respondents with the opportunity to express themselves freely, resulting in a greater variety of information, respondents may not be able to express themselves, so information can be lost (Kumar, 1999)

The choice among open or closed ended questions depends on many considerations, including the question content, respondents' motivation, methods of administration, type of respondents, access to skilled coders to code open ended answers, and amount of time available to develop a set of unbiased answers (Ticehurst and Veal, 2000). As the researcher wishes to determine the level of importance attached to different influences on the Internet users' decision to utilise e-commerce, the closed ended questions is adopted in the questionnaire of this survey. However, to overcome the disadvantage involved in such questionnaire, wide range of responses was considered to avoid biasing responses. With the intention of avoiding forcing respondents to give opinions on issues, in which they have no opinion, it was decided to use the term of "Neutral" and "Not applicable" responses when applicable. Furthermore, an additional question was added at the end of the questionnaire, which provided opportunity to contact the respondent for future research purpose.

The questionnaire began with an introduction to the research purpose and then provided instructions for respondents to complete it. It consists of a total 45 questions, and most questions included a 5-point Likert type scale, where respondents were asked to indicate the extent to which agreed or disagreed with a statement. Most questions are closed questions because they were easy to answer and analyse. Major

sections of questionnaire adopted five point Likert scale, where 1 represented strongly disagree and 5 signified strongly agree. The questionnaire was attractively designed to encourage respondents to cooperate in this study.

The questions were designed after a thorough review of online trust development and attitude about e-commerce literature, taking into account of cultural influences. According to research objectives and research questions, four themes formed the structure of the questionnaire:

- User Profile
- Purchase Attitude
- Four Factors influence
- Outcomes

Due to design of questionnaire, the respondents were asked to provide biographic details at first part, such as their occupation and qualifications. The content of questionnaire was divided into six sections (see Appendix I) focusing on the following: information of purchase attitude, online trust, online security, culture influence, Intention to purchasing, perceived risk, outcomes and general information.

#### **4.61 User Profile**

This section elicited demographic data about respondents, such as their age group, gender, occupation, qualification, live place, length of time using Internet and accessibility towards Internet. These basic data were provided to the general background and Internet experience of respondents.

#### **4.62 Purchase Attitude**

The second section elicits the general information on consumer purchase attitude towards online purchasing. It seeks factual information on the respondent's attitude, such as frequency of purchasing and type of product. These data were provided to test relationships between Internet experience and consumer's decision to shopping online.

#### **4.63 Four Factors**

The third section includes questions on the concept of online trust and security, for example, what the respondent understood and felt by online trust and security his/her opinions on e-commerce. This section also includes questions as to cultural influence on e-commerce, respondents' intention to purchase, and how respondents' perceptions of risk on e-commerce. This section was designed to examine Internet users' understanding of different factors influence and attitudes towards these factors. Questions were based on the e-commerce literature linked to prior studies (For example, Kim, 2002; Gefen et al., 2003; Teo and Liu, 2005) and examined the suggested content. These data were provided to assessing the impact on respondents' decision. Importantly, the first question asked respondents to define online trust, in order to emphasise the different factors in the questionnaire.

#### **4.64 Outcomes**

This section included six questions which focused on possible reasons for using e-commerce, attitude towards e-commerce and the future of using e-commerce. Data from this section would assist in evaluating e-commerce development in different regions.

#### **4.7 Pilot Test Study**

Once questionnaire has been developed, each question in questionnaire as a whole must be evaluated before final administration (Hoinville and Jowell, 1989; De Vaus, 2002). The objective of a pilot study is to help researchers refine their data collection plans with respect to both the content of the data and the procedures to be followed. In addition, the pilot study helps researchers to develop relevant lines of research questions and provide some conceptual clarification for the research design (Leung, 2001). The purpose of this pilot study is to examine question construction and logic, such as structure, content and layout, etc. The objectives of piloting the questionnaire were:

1. To identify potential problem in following the research procedure
2. To filter out questions which were inappropriate, ambiguous and irrelevant
3. To produce an appropriate questionnaire which allows completion in less than 15 minutes
4. To develop a simple and user friendly layout

The exact size of pilot study depends on the aims of test: small size of pilot work is often able to reveal wording and layout problems (Hoinville & Jowell, 1989). For this study, the researcher selected the pilot study based on convenience and access. The sample selected for the pilot study was consisted of 35 research students from the Edinburgh Napier University in the UK in May 2008. Questionnaire for piloting were printed on both sides of A4 paper. The pilot questionnaires were sent to the students by email and hard copy with covering letters. The cover letter provides an explanation of the study purpose aiming to encourage respondents to complete the questionnaire.

In order to maximise the response rate, the questionnaire was sent three times to all respondents during that period.

17 of 35 students responded to the questionnaire. However, two returned questionnaires had to be eliminated because they were incomplete, and respondents giving “unfamiliarity with question or answer” as reason for their incompleteness. Thus, 15 questionnaires were usable, as 43% response rate, from different country regions, such as from Asia and Europe. Overall, students provided a vast amount of information with their responses, the majority of which was very useful. The analysis of pilot questionnaire data was superficial; it relied on the mean scores derived from responses to each question to identify problematic questions.

The pilot test was used not only to refine the items and constructs used in the study, but also to enable the researcher to clarify the wording, content and general layout of the survey.

Several themes arose from the respondent’s responses. First, it seems that respondents were generally familiar with the concept of e-commerce. The majority of respondents had online purchasing experience more than three years and using e-banking services quite frequently, since 100% of them indicated they had used e-banking services. Second, nearly 80% of respondents were satisfied with e-commerce and would continue to do so. Third, there were various opinions on the online trust, online security, and cultural influence, which indicated that the results provided different views from different geographic areas.

After piloting the questionnaire, there was a need to evaluate it in order to refine the



final questionnaire (Appendix II). A few factors needed to be considered in the design of the final questionnaire.

First, the time to complete the pilot questionnaire was shorter than expected, thus, the number of questions needs to be increased (question P5, see Appendix II). Second, the questionnaire's structure needed to be rearranged. The respondent profile section had moved to the end instead of the beginning, which gives respondent more paths to answer all questions. Third, since the questionnaire was translated into Chinese, special attention was needed to ensure that the language used in translating it did not affect the meaning and ideas. Fourth, some questions were redesigned from the final questionnaire, as they had not provided a clear instruction or answer (question C3, Perceived risk section). Fifth, there was a need to change some questions into different scale format to ensure the researcher acquired sufficient information (Perceived risk section). Sixth, it was necessary to reduce open ended questions, because respondents were reluctant or refuse to answer these questions. Finally, the questionnaire's layout needed to be changed an A4 booklet format to make it easier for respondents to read and answer questions.

The final questionnaire was designed on the basis of pilot questionnaire findings. As indicated above, there were several issues in the pilot questionnaire, which needed rectifying. There are discussed in the next Section.

The layout of the final questionnaire was improved as a result of the pilot study. There were three substantial changes:

- Respondent information was placed on the last section of questionnaire, to allow respondents to concentrate more fully on questions in the main section.
- The majority of questions were adopted in five-point Likert scale so that respondents could indicate the extent to which they agreed or disagreed with statements.
- Open-ended questions were reduced to focus principally on close answer.

## 4.8 Sample Selection

Preparatory work for the final questionnaire survey involves identifying the sample group. Great China Region (i.e. China, Taiwan and Hong Kong) is a big geographic area and there are millions of Internet users. It was impossible to include all Internet users in the sample due to time and cost constraints. According to Hoinville *et al.* (1989), a decision about the survey population stems more from the purpose of the survey than from sampling considerations. Therefore, after considering various factors, particularly cost, and time availability, the researcher decided to use web based survey to invite respondents to answer the questionnaire.

Sample size refers to the number of online visitors to be included in this study. Determining the sample size involved both qualitative and quantitative considerations. The qualitative considerations include (Malhorta, 2009):

- The importance of a decision. More information and precision are needed for an important decision. This demands a larger sample size. However, sometimes, as the sample size increases, each unit of information is obtained at greater cost.
- The nature of the research, i.e. whether the research is qualitative or quantitative. Usually, a qualitative research does not require a large sample size.
- Sample sizes used in similar studies.
- Incidence rates, i.e. the number of eligible respondents.
- Completion rates, and
- Resource constraints, which include time, money, and personal.

Quantitative considerations, as suggested by different statisticians, e.g., involve the following issues:

- The absolute precision desired in the study. A high level of precision requires a large sample size.
- A specified level of statistical significance, which is also call alpha level (significance level), or the odds that the observed result is due to chance. A high significance level requires a large number sample size.
- The number of variables involved in the study. The cumulative effects of sampling error across variables can be reduced in a large sample.
- The statistical techniques to be applied. If sophisticated analysis of the data using multivariate techniques is required, the sample size should be large.

An appropriate sample size for a research can be calculated. Formulas that calculate the sample size based on the absolute precision approach to estimate a population parameter with either a known population variance or an unknown population variance can be found in many marketing research studies. However, the sample size criteria based on estimating the population parameter was no used in this study.

The required sample size in this research was primarily dependent upon the variables in the study and statistical techniques. Based on Comrey and Lee's (1992) sample size guideline for factor analysis, a sample with 50 cases is very poor; 100 cases is poor; 200 cases is fair; 300 cases is good; 500 is very good; and 1,000 is excellent.

Tabachnick and Fidell (2006) stated that if the factor analysis is applied in an exploratory or confirmatory study, a minimum of 300 responses will be required.

There are more suggestions on the decision of an appropriate sample size. However, researchers need to be cautious about a large sample size recommended by a given guideline. A large sample size has potential drawbacks. Although an increase in sample size reduces sampling error, it often leads to an increase in the total error of a research effort because other errors increase more than proportionately with sample size (Churchill, 2004). The larger the non response problem, the greater the question of whether the responses secured are representative of the selected sample. Response error can also increase when the sample size is increased. A large sample will typically mean the use of more interviewers if the study is being done by phone or in person. This raises a host of issues with respect to the selection and training of the interviewers so that they all handle the interviews in the same way. Otherwise, the different responses secured can be as much a function of the interviewers.

A study shows that non sampling error is the major contributor to total survey error, while random sampling error is minimal (Churchill, 2004). Hair *et al.* (2005) indicated that over sensitivity would be caused by a fairly large sample size, such as 400 to 500. This means that it is possible that detected significant differences might be caused by a large sample size rather than actual difference among the respondents.

Therefore, Tabachnick and Fidell (2006) suggested that in addition to considering the number of variables, researchers should consider the statistical and practical reasons when deciding a sample size. Further, they also stated that researchers apply the smallest number of cases that has a decent chance of revealing a relationship of a

specific size.

Draw upon different views, the researcher of this study estimated that a sample size between 200 and 300 would be sufficient and could accommodate different general sample size requirements for applying the statistical techniques and analysis. Any sample size between 200 and 300 responses should be enough to detect legitimately significant difference and to prevent statistical over sensitivity toward slight variations.

Data for this study were collected in a real setting. The data collected from Internet users in China, Hong Kong and Taiwan during the summer from June to July 2008. The collection method was purposive, non-probability sampling conducted within the areas involved. This study also uses factor analysis for certain questions to define constructs. The data collection process included the following steps:

1. The author designs a questionnaire and creates it in survey website (My3Q.com) containing the survey instrument;
2. A short initiation message and the link to the URL of the survey website was designed and run on Gamer.com.tw's front page and other websites.

The survey was a self administered questionnaire. The invitation message shown in the front page of survey website was deliberately design to revel the purpose of this survey. Also the front page containing the author's contact information and a consent letter assuring data confidentiality to the respondent and his/her rights as a voluntary participant. Those who voluntarily chose to complete the questionnaire at their

convenience were instructed at the beginning of the questionnaire that the survey would take approximately ten minutes to complete and they should answer all the questions. After respondent clicked a “submit” button placed at the end of the questionnaire, the respondent was re-directed to a thank you page.

This study strived to overcome some drawbacks inherited in web page based surveys. For example, any respondent who was answer the question got his/her own Internet Protocol address in data and this respondent data was not served the survey instrument a second time. Thus, multiple responses could be reduced to minimum.

The sample group was specifically selected to represent a group of e-commerce users that would be considered ‘early adopters’ and was considered to be a close match to e-commerce users in developed countries (Bart et al., 2005). With previous research experience in China and knowing the degree of e-commerce and economic development among the general populace, early adopters had been selected for this survey because they can be consider as most likely users of e-commerce, with access to Internet, significant purchasing power, exposure to concepts and practice worldwide and willing to try new things (Zhu, 2003).

The survey adopted a sample frame of general Internet users in China, Hong Kong and Taiwan. The sample group have different characteristics, economic ability and consumption behaviour, however, according to the recent studies, students would be the major group of respondents since student samples facilitate sample comparability across different areas (Douglas & Craig, 1983). Also Njite and Parsa (2005) indicated that adopting students as survey sample is typically considered more applicable to online consumers.

The sample population was not intended to be a representative of the general populace in Mainland China, Hong Kong and Taiwan. Since the aim of this survey was focuses on cultural influence, to get the opinions of actual users of e-commerce was priority findings.

An online survey performed for obtaining data and target at online consumers. An HTML format questionnaire was published on Web site and respondents can be hyperlink from other web site to the survey. The study subjects consisted of a panel from an online survey website (<http://www.my3q.com/>).

The Internet offers both web based surveys and e-mail for prospective researchers to use for data collection (Sheehan and Hoy, 1999). A web page based survey refers to that a researcher can posts a survey instrument on the internet and allows online visitors self select answer and complete the survey. A web page based survey tends to collect data from individuals all over the world. The data collection in the Internet questionnaire settings is believed to be more appropriate and suitable for studies addressing e-commerce.

The questionnaire was developed in English and translated to Chinese by a person whose first language is Chinese. This questionnaire was initially administered as a pre-test to small group of participants and there were no major problems with understanding the question. As the survey will be conducted in three different Asian regions (China being predominantly Simplified Chinese version, Hong Kong and Taiwan being predominantly Traditional Chinese version), three versions of the questionnaire were administered. These two Chinese versions were then compared



and no item was found to pertain to a specific cultural context in terms of language.

As the survey was intended to apply to a wide geographical area, the chosen method of delivery was a Website hyperlink. The study provided links on several online stores web site (Gamer.com.tw), newsgroups (PPX.net), online forums (FDZ.com) and Web-board postings (Discuss.com.hk) from different geographical area and by inviting them to visit the online survey site (<http://www.my3q.com/>). The respondents in this study were invited through click hyperlink of web questionnaire. The Gamer.com.tw, a disguised name for a real commercial website, is the biggest Chinese society portal and a combination of newsgroup and online store. It provides visitors with massive life and electronic related information about digital products as well as accepts orders on electronic related products. Gamer.com.tw has millions of click every month. The visitors to Gamer.com.tw represent a large group of online visitors from different parts of the Great China Region and possess the information sought by the researcher.

PPX.net newsgroups are Mainland China based and Discuss.com.hk discussion board are Hong Kong based. FDZ.com is the combination of China and Hong Kong online forums. The language used on these web sites was Mandarin respectively with different version, i.e. Taiwan and Hong Kong based web site would use Traditional Chinese version text, and China based web site would use Simplified Chinese version text. These web sites were selected based on popular Internet portals and high level of sufficient amount of web traffic, thus were considered ideal for this study (Kozinets, 2002). According to Klein (2005), the China based Internet portals are less well known outside Asia, but all have large number of visitors. The use of discussion boards and online in Great China Region is high. From CNNIC survey in 2007, more

than 18 million Chinese Internet users regularly use discussion boards and online forums to read news, search for information and debate on different issues (CNNIC, 2009). Discussion boards and online forums are good source of information for Internet customers or potential customers within different cultures, and thus provide a potentially important source of e-commerce for influencing purchase intention (Kozinets, 2002).

## **4.9 Data Analysis**

The data analysis process involved two parts, cleaning the data and analysing the data. Che Rose (2002) suggests that before analysing the data, it was necessary to clean the data since data collected from multi methods are often not clean, and needs to be edited.

### **4.9.1 Cleaning the Data**

The first step was to examine errors by a respondent who may have misunderstood an instruction. The second step involves editing the data. This is an important process because data provided by a respondent in open end questions may differ from that presented in the survey. Therefore, the researcher needed to classify any differences in the editing process.

The third step was to code responses. An essential part of coding for survey analysis is to ensure that each respondent has one and only code for each variable (Wisker, 2001; De Vaus, 2002). Coding missing data is another crucial part in this step. Missing data arise because not all respondents answer each item in a questionnaire. Reason for non response may include refusal to answer, not ascertained, no opinion on the question. There are no set rules as to what particular codes should be allocated to missing data as long as the missing data code is not confused with the code for valid response (Siegel and Castellan, 1988; De Vaus, 2002). In this study, missing data were coded in the blank as invalid response, which were not taken into account. At this stage, raw data was manually inputted into the SPSS data entry.

#### **4.9.2 Statistical Data Analysis**

Generally, there are two types of statistical analysis, parametric and non parametric test. The first part of this section will discuss the choice of non parametric statistical techniques for the analysis of questionnaire responses, while the second part will discuss applicable statistical tests used in this study.

Hussey & Hussey (1997) noted that parametric and non parametric techniques differ according to their underlying assumptions where the data is analysed. The parametric test is based on the assumption that data is normally distributed and samples come from distributions with equal variance. It is usually implemented when the sample is large and the data are interval or ration scales. However, non parametric test is based on the assumption that the data is freely distributed. The non parametric test is generally utilised when the data is either ordinal or nominal. The advantages of using non parametric test are (Hettmansperger and McKean, 1998; Seigel & Castellan, 1988; Dixon-wood, et al., 2004):

1. Can be used for all types of data
2. Make few assumptions about the data
3. Available to treat data which are classificatory or categorical
4. Treat samples made up of observations from several different populations

However, it is necessary to mention that non parametric tests do have their weaknesses. The main weakness of non parametric tests is that they tend to be less sensitive than more powerful parametric tests, and therefore may fail to detect differences between groups that actually do exist (Pallant, 2003). Therefore, the study

also used parametric tests as robustness checks to examine whether different results exist by using parametric tests and non parametric tests.

It is sometimes unclear as to whether to use parametric or non parametric statistics to analyse questionnaire data. A questionnaire generally elicits opinions on give statements using a five point Likert scale. The data produced from these ranked questions are ordinal. However, according to Gore (1994), some researchers treat such data as ratio data that can be analysed using parametric statistics. But this treatment is inappropriate, because for the interval or ratio scale, the differences between successive values must be equal. Silver (1997) noted that the differences are not equal for the ordinal scale. For example, it is difficult to say the difference between neutral (3) and agree (4) is the same as that between agree (4) and strongly agree (5). Essentially, non parametric tests compare the ranks obtained in the different conditions of the independent variable. For example, non parametric statistics was use by Solomon (1999) to test attitudes of questionnaire respondents. Seigel and Castellen (1988) argue that attitudinal surveys, such as the current research enquiry, are more appropriately analysed using non parametric statistics.

This study adopts the view that data from a questionnaire should be treated as ordinal rather than interval. Therefore, non parametric tests are utilised to indicate whether differences occurred between two or three sample populations' responses, and whether the data derive from separate samples (Hettmansperger and McKean, 1998; Seigel & Castellen, 1988). However, one parametric test, factor analysis, is employed in this study, as no non parametric equivalent of the test exists. For the analysis, Statistical Package for Social Science (SPSS) version 14 and Microsoft Office XP Excel software were used.

### 4.9.3 Use of Non Parametric Statistical Tests

There are two different types of statistical techniques: the descriptive statistical method and the analytic method or statistical inference. The descriptive technique refers to the transformation of raw data into a form that is easy to understand and interpret, and it is mainly based on the calculation of the mean, median, frequency distribution, percentage distribution, etc (Silver, 1997; Seigel & Castellen, 1998; Sloomon, 1999).

Although descriptive statistics can provide an overall impression of respondents' view, for example, a ranking of their responses to a question, they do not test significance and therefore cannot be used for hypothesis testing. Statistical inference indicated how reliable descriptive are and whether they can be generalised with a given degree of confidence (Hettmansperger and McKean, 1998; Seigel & Castellen, 1998; Pallamt, 2001). Statistical inferences in this research were used to make inferences from sample statistics to the population parameter.

The signed rank test is a powerful test, as it does not just compare the sign of the differences, it also compares the size of the differences, therefore, Seigel and Castellen (1988) indicated that "*the researcher can make the judgement of "greater than" between any pair's two value as well as between any two difference score arising from any two pairs"* (p. 87).

The study's hypotheses were examined using the Spearman's rank order correlation test. Spearman's test was utilised to describe the strength and direction of relationship between variables. A positive correlation indicates that as one variable increases, so

does the other. A negative correlation indicated that as one variable increases, the other decreases.

#### **4.10 Summary**

This chapter has discussed the research methodology, data collection and analysis. In the first section, the descriptive and explanatory research approaches have been presented, the advantages of qualitative and quantitative methods have been examined and the situations in which they are suitable have been explained. Issues relating to reliability and validity have also been discussed. In the second section, the rationale for selecting an online questionnaire survey has been considered, and its strengths and weakness discussed in depth. Moreover, the data collection strategy and process which involve two parts: a pilot questionnaire and final online questionnaire survey have been explained in full, including sample design, question construction and perceived response rate. Attentions have been paid to incorporate advice from the literature and existing theory into the research design. Finally, the data collection strategy was presented and the types of statistical techniques implement to analyse data were explained. The next chapter will analyse and discuss main findings derived from the online questionnaire survey.



## **CHAPTER 5**

### **ANALYSIS OF RESULTS I**

#### **5.1 Introduction**

The objective of this chapter is to analyse questionnaire responses and provide the results of the statistical analyses. Section 5.2 presents the sample size and response rate of the survey, includes demographic information of respondents. This chapter examines all respondents' opinions on online trust, security issues, cultural influence, purchased intention and risk perception on e-commerce following by an analysis of respondents' general perception of risk in Section 5.3. Descriptive statistics analysis was applied to each question to discover respondents' preferred responses to state proposition. Section 5.4 summarises the chapter five.

## 5.2 Sample Size and Response Rate

Three different geographic areas were selected from Great China Region, which are Mainland China, Taiwan and Hong Kong. 692 questionnaires were answered in total via Internet. However, 29 were unable to complete whole questionnaire and 14 were inappropriate response for reasons, such as respondents was not include in target area. Consequently, 649 questionnaires were useable for analytical purposes, and generating a usable rate of 93.8%. Incorporating the fact that Gamer.com.tw, PPX.net, FDZ.com and Discuss.com.hk have thousands of visitor everyday but it took more than four weeks for this study to obtain 692 responses, it was estimated that actual response rate to this survey was lower than one percent. According to Malhorta (1999), web based surveys usually have poor response rate.

Respondents' location was also examined. Table 5.1 Part A shows that 394 (60.7%) respondents came from Mainland China, 214 (33%) respondents were from Taiwan and only 41 (6.3%) respondents were from Hong Kong. The respondents' gender was almost evenly distributed, with approximately 55 percent male and 45 percent female (see Table 5.1 Part B). The gender of the China and Hong Kong respondents was evenly mixed (China: 47% males & 53% females; Hong Kong: 44% males & 56% females), while the majority of the Taiwan (72.4%) respondents were males (see Table 5.1 Part C & D). The gender distribution of the China respondents was different from the findings of CNNIC report (2007), which showed that 58% of Internet users were males. The gender percentage of the Hong Kong respondents was comparable to the result of Hong Kong in Figures (2008), which reported that 52.5% of the respondents were females.

Table 5.1 Sample size

Part A: Questionnaire Response

**Sample size**

	Number	Percentage%
<b>Total Response</b>	<b>692</b>	100%
Incomplete questionnaire	29	4.2%
Inappropriate response(other)	14	2.0%
<b>Total usable response</b>	<b>649</b>	93.8%
China	394	60.7%
Taiwan	214	33.0%
Hong Kong	41	6.3%

Part B: Total Usable Response Between Male and Female

Total usable response	649	100%
Male	360	55.5%
Female	289	44.5%

Part C: Male Response

<b>Total Male</b>	360	100%
China	187	51.9%
Taiwan	155	43.1%
Hong Kong	18	5.0%

Part D: Female Response

<b>Total Female</b>	289	100%
China	207	71.6%
Taiwan	59	20.4%
Hong Kong	23	8.0%

Despite the best endeavours of survey design, the non-response is more likely to occur in any circumstance. According to Wallace and Mellor (1998), there are two types of non-response: unit non-response and item non response. Unit non-response exists when certain types of people decline to participate in the study or be incontactable, for example people who never accessed to the Internet will not able to participate to this survey. Item non-response means people who do participate in some types of questions decline to answer particular types of question. The unusable questionnaires were incomplete may due to respondents sensitive to question relate to their personal status or privacy. There are three approaches to reduce this bias. Armstrong and Overton (1977) suggested that the first method is using the extrapolation techniques, which means comparing early to late responses. Extrapolation methods are based on the concept that subjects who respond late are similar to non-respondents (Pace, 1939). Late respondent refers to the response generated by a stimulus, such as follow-up letter (Armstrong and Overton, 1977). The minimum number of late respondent is 30 that can ensure it is large enough to be meaningfully and practically (Lindner *et al.*, 2001).

Respondents were given the opportunity to provide biographic details and allowed to reply anonymously. Only twenty nine respondents provided their contact information for further research. This reflected the conservative nature of Chinese people, who are reluctant to disclose personal information to people whom they do not know or familiar with.

This part of the questionnaire focuses on respondents' educational background and Internet experience. Regarding respondents' academic background 649 of the 692 revealed their educational details. Of whom 409 (63%) held a Bachelor degree (Table

5.2, Part A) which indicates that majority of the respondents was well educated. The education level of respondents was higher than high school (93.6% of the China respondents, 87.8% of the Taiwan respondents, and 90.2% of the Hong Kong respondents). Further, 47.8% of respondents were aged between 19 and 30 (Table 5.2, Part B). Age was measured as an open-ended item to verify that the respondents were 19 to 30, but the results were organised in six categories for the purpose of presentation. It can thus be concluded that respondents were young generation, experienced with Internet techniques, and who were able to judge and evaluate the questionnaire's contents. In addition, Hong Kong had a much higher percentage of respondents in the age of over 40 years old than China and Taiwan (Hong Kong: 31.7%, China: 17%, Taiwan: 12.6%).

These results were no different to other studies, which indicate that the respondents to this survey were not abnormally representing a unique group of Internet users and representing a group of typical Internet users. Therefore, it seems safe to say that the non-response bias was not a problem in this study.

Table 5.2 Respondents' Biographic Details

Part A: Respondents' Academic Background

**Education Level**

	China	Taiwan	Hong Kong	Percentage
Lower than high school	7	8	1	2.5%
High school	18	18	3	6.0%
Vocation/Technical school	60	44	10	17.6%
Degree/ undergraduate	264	126	19	63.0%
Master/ postgraduate	40	15	6	9.4%
PhD/ DBA	5	2	2	1.4%
Others	0	1	0	0.2%

Part B: Respondents' Age

**Age Group**

	China	Taiwan	Hong Kong	Percentage
Less than 18	2	52	3	8.8%
19-30	194	103	13	47.8%
31-40	131	32	12	27.0%
41-50	46	19	7	11.1%
51-60	17	7	4	4.3%
More than 61	4	1	2	1.1%

Part C: Respondents' Occupation

<b>Occupation</b>	China	Taiwan	Hong Kong	Percentage
Managerial	11	9	3	3.5%
Professional	24	3	2	4.5%
Academic/Educator	30	5	3	5.9%
Computer Technical	52	36	5	14.3%
Service	61	24	6	14.0%
Clerical/Administrative	67	3	4	11.4%
Sales/Marketing	47	4	7	8.9%
Full- Time Student	77	113	7	30.4%
Self-employed	18	2	2	3.4%
Unemployed	7	14	1	3.4%
Retired	0	1	1	0.3%
Other	0	5	0	0.8%

649 respondents were participated in the survey, 197 were full time students (Table 5.2, Part C). According to Kovar et al. (2000), student-subjects provide a reasonable surrogate for online consumers who tend to be younger and more educated than traditional consumers. Respondents' Internet usage and familiarity of Internet were high which indicated they possessed enough experience and knowledge of using Internet. It also confirmed in Kotkin's (1998) study, online consumers were generally younger and more educated than conventional consumers.

Respondents' previous experience with Internet was examined and presented in Table 5.3 Part A. The frequency of Internet usage indicated that more than half of respondents were experienced Internet users (Table 5.3, Part A). The survey results also showed that the 79.1% of China respondents have Internet experience exceeding 7 years, compare to 50% of Taiwan respondents and 48.7% Hong Kong respondents, which indicated China respondents had more Internet experience than other regions.

More than half (54.2%) of the respondents said they accessed to the Internet from home (Table 5.3, Part C). The largest percentage of average daily Internet usage was 3-5 hours (49.6%), followed by 1-3 hours (35%). Only 1.2% of the respondents used the Internet more than 10 hours per day (Table 5.3, Part B). More than 80% of the respondents in the three regions said their daily usage of Internet was about 1-5 hours.

More than 90% of Hong Kong and Taiwan respondents reported having an e-commerce experience, while only 84% respondents from China had done so. The Taiwan respondents spent more online hours per day than the other groups (Table 5.3, Part B).

Table 5.3 Respondents' Online Details

Part A: Respondents' Internet Experience

<b>Internet Experience</b>	<b>China</b>	<b>Taiwan</b>	<b>Hong Kong</b>	<b>Percentage</b>
Less than 3 years	4	4	2	1.5%
3 ~ 5 years	21	25	7	8.2%
5 ~ 7 years	57	77	12	22.5%
More than 7 years	312	108	20	67.8%



## Part B: Respondents' Average Online Hour

### Online Hour Per Day

	China	Taiwan	Hong Kong	Percentage
Less than one hour	15	4	3	3.4%
1 ~ 3 hours	152	58	17	35.0%
3 ~ 5 hours	224	79	19	49.6%
6 ~ 10 hours	2	67	1	10.8%
Above 10 hours	1	6	1	1.2%

## Part C: Place Access to Internet

### Place Access to Internet

	China	Taiwan	Hong Kong	Percentage
Home	167	152	21	52.4%
School, college or university	107	30	10	22.7%
Work place	77	29	4	16.9%
Public building (e.g. library)	24	2	4	4.6%
Commercial service	19	1	2	3.4%

Approximately 64% of all respondents have purchased products or services at least once from any web site in the past 12 months (Table 5.4, Part A). In terms of time on Internet, approximately 68% of all respondents have had access to the Internet for more than seven years (Table 5.3, Part A). More than 50% of Hong Kong respondents had high volume online purchase which was average 6 to 10 times over last year (Table 5.4, Part A) but the average first time purchase via Internet was less than three years ago (Table 5.4, Part B). Interestingly, the last purchase online was within a month for majority of Taiwan and Hong Kong respondents (Table 5.4, Part C).

Over 80% of all respondents do not use e-banking services at all (Table 5.4, Part D) and 13.7% of the respondents had never purchased via Internet, especially the respondents from Mainland China (16%). Interestingly, comparing with the pilot

study result, more than 85% of all respondents had used e-banking services. The results suggest that Chinese Internet users may view financial services or products as sensitive issues, and were therefore concerned about expressing their personal data and privacy, confirming the conservative characteristics of Chinese Internet users.

Table 5.4 Respondents' Online purchase attitude

Part A: Respondents' Online Purchase Frequency

**Purchase Frequency**

	China	Taiwan	Hong Kong	Percentage
Once	76	23	4	15.9%
2-5 times	158	79	11	38.2%
6-10 times	44	36	21	15.6%
More than 10 times	52	55	1	16.6%
Never	64	21	4	13.7%

Part B: First Time to purchase via Internet

**First Time**

	China	Taiwan	Hong Kong	Percentage
Within this week	14	11	2	4.2%
Within this month	17	18	4	6.0%
Within this year	50	40	10	15.4%
1- 3 year ago	87	47	16	23.1%
More than 3 years ago	162	77	5	37.6%
Never	64	21	4	13.7%

Part C: Latest Purchase from Internet

**Last Time**

	China	Taiwan	Hong Kong	Percentage
This week	27	56	6	13.7%
This month	52	91	19	25.0%
Within this year	117	36	12	25.4%
More than 1 year ago	134	10	0	22.2%
Never	64	21	4	13.7%

Part D: Respondents' e-Banking Usage

**E-Banking**

	China	Taiwan	Hong Kong	Percentage
Yes	71	48	10	19.9%
No	323	166	31	80.1%

Part E: Type of product purchased via Internet

**Type of product**

	China	Taiwan	Hong Kong	Percentage
Digital products	41	51	7	15.3%
Electronics	11	30	2	6.6%
Books	24	37	15	11.7%
Groceries	3	8	1	1.8%
Flowers	1	3	0	0.6%
Fashion and apparel	33	16	3	8.0%
Tickets	73	7	5	13.1%
Toys	22	20	2	6.8%
Financial services	7	4	1	1.8%
Not applicable	64	21	4	13.7%
Others, please specify:	115	17	1	20.5%

To the open-ended question asking for the types of products they purchased, the respondents answered with a variety of products. Further, the preference of product was diversify which is different from other previous studies (Yang, 2007). This result

also indicated that wide range of products had been purchased over Internet during last few years and respondents were familiar with e-commerce through online purchasing (Table 5.4, Part E). Digital products (including CDs, DVDs, and instruments), tickets (including travel related products, concern tickets) and books (including magazine, novel, text book) were the most frequently purchased items. According to Ernst and Young (2003), books and CDs were among the top four online purchase categories in most countries.

Further, the preference of product was diversify which is different from other studies. This result had slightly changed since Yang's survey in 2007, which book magazine was on top ranking and other was the bottom. The result also indicated that wide range of products had been purchased over Internet during last few years, for examples, beauty supplies, online game voucher, furniture, cake, bike lock, pet supplies and health supplies. Especially the beauty products and online game voucher had been raised several times in the survey results.

More than 90% of Hong Kong and Taiwan respondents reported having an e-commerce experience, while only 84% respondents from China had done so (Table 5.4, Part B). Comparing to CNNIC survey in 2003, only 34% of Internet users have purchased something online. Taiwan respondents spent more online hours per day than the other groups (Table 5.3, Part B) but the frequency of online purchasing did not increase significantly (Table 5.4, Part A).

Near 50% of all respondents were satisfied with purchases via Internet (Table 5.5, Part A) and more than half of all respondents would purchase again via Internet (Table 5.5, Part B) and recommend to their family and friends (Table 5.5, Part C).

However, the average length of completing a purchase online seemed to be long (more than 30 minutes) (See Table 5.5, Part D); this may due to familiarity of different web site interface or other reason. No doubt, more than 50% of all respondents answered that the main reason to purchase via Internet was convenience, followed by bargain price (Table 5.5, Part E). This result also confirms with Chen and Chang's research (2003).

Table 5.5 Respondents' Online purchase outcome

Part A: Respondents' satisfaction of Online Purchase

**Satisfaction**

	China	Taiwan	Hong Kong	Percentage
Very satisfied	17	43	3	9.7%
Satisfied	143	95	20	39.8%
Neither	118	41	7	25.6%
Dissatisfied	31	11	5	7.2%
Very dissatisfied	21	3	2	4.0%
Never	64	21	4	13.7%

Part B: Respondents' possibility of Online Purchase

**Same Goods**

	China	Taiwan	Hong Kong	Percentage
Definitely yes	131	59	7	30.4%
Possibly	182	136	25	52.9%
Probably not	37	15	4	8.6%
Definitely no	44	4	5	8.2%

### Part C: Recommendation of Online Purchasing

#### **Recommendation**

	China	Taiwan	Hong Kong	Percentage
Definitely	65	15	2	12.6%
Possibly	158	123	28	47.6%
Probably not	132	65	7	31.4%
Definitely not	39	11	4	8.3%

### Part D: Time spent on Online Purchase

#### **Time Spent**

	China	Taiwan	Hong Kong	Percentage
Less than 10 minutes	35	19	5	9.1%
11~30 minutes	87	53	2	21.9%
31~45 minutes	20	41	3	9.9%
46~60 minutes	149	18	22	29.1%
More than 1 hour	39	62	9	16.9%
Not applicable	64	21	4	13.7%

### Part E: Reason of Online Purchase

#### **Main Reason**

	China	Taiwan	Hong Kong	Percentage
Convenience	213	98	26	51.9%
Time saving	51	24	7	12.6%
Bargain price	65	41	3	16.8%
Secure transaction	2	5	0	1.1%
Range of products	41	29	4	11.4%
Other	22	17	1	6.2%

### **5.3 Descriptive Statistics Analysis**

All respondents were provided with a list of 24 statements related to online trust, online security, cultural influence, purchased intention and risk perception of e-commerce. Then they were asked about the extent of their agreement with these statements. Each statement was assessed separately for China, Taiwan, and Hong Kong. Thus, the purpose of this section is to report on the analysis of respondents' attitudes on these statements. SPSS was used to calculate the means and standard deviations for each statement. As these statements are related to five different issues, this section divides into five parts.

#### **5.3.1 Online Trust**

Using a scale of 1 (strongly disagree) to 5 (strongly agree), respondents were asked to indicate their level of agreement with the presented issues of online trust. Table 5.6 shows frequencies and percentages of the respondents for each statement. The average score has been computed by taking the arithmetic mean of the rank number given by each respondent, i.e. 1 means strongly disagree and 5 means strongly agree. The standard deviation of the scores is also shown in the table to provide an indication of relative homogeneity of responses. Most of response for all of these statements rises above a midway rank of 3. Descriptive statistics reveal statement (2) had the highest mean of 3.65 and more than 60% of respondents agreed/strongly agreed with this statement. This suggests respondents tended to believe online vendors provide sufficient product information.

Respondents' expressed less support for statement (1) which achieved a mean score

of 2.98. The statement (1) suggests that “I have faith in humanity”. The results in table 5.6 part A indicate that 26% of the respondents agreed with this statement, while 19% of them tended towards rejecting this statement and 54.9% provided an undecided view. Hong Kong respondents tended to have more disagreed opinion comparing with other regions. The main score for this statement is 2.98. This finding also confirms to Hofstede (2001) study that collectivists were difficult to trust outsider. This result also suggests that Chinese Internet users are relatively easy to develop trust and do not find significant differences across China, Taiwan and Hong Kong.

Statements (2) and (4) introduce that “more than 50% online vendors provide correct and sufficient information, keep their promise and achieved customer expectations”. Over 50% of respondents agree/strongly agree with statement (2) and (5), whereas only less than 15% strong disagree/disagree with them. The findings suggest respondents agree that most online vendors provide correct product information and keep their promises and commitments.

Although more than half of respondents were agree with statements (2) and (4), statements (3) and (5) did not provide a similar result. Nearly 50% of respondents expressed less support with these two statements. This suggests respondents tended to believe online vendors but they were not sure whether online vendors provided sufficient information and achieved customers’ expectation. According to Gefen (2000), online trust is an important factor of consumers’ assessment, whether the online vendor is trustworthy.



Table 5.6 Respondents' Online trust

Part A: "I have faith in humanity"

**Online Trust1**

	China	Taiwan	Hong Kong	Average	Overall
Strongly Disagree	7.1%	8.5%	9.7%	7.7%	
Disagree	10.9%	10.7%	17.1%	11.2%	
Neutral	56.1%	53.3%	51.2%	54.9%	
Agree	22.1%	23.8%	22.0%	22.7%	
Strongly Agree	3.8%	3.7%	0.0%	3.5%	
Mean	3.05	3.04	2.85		2.98
Standard Derivation	0.986	0.984	1.002		0.989

Part B: "More than 50 per cent of online vendors provide correct information about the items that I want to purchase"

**Online Trust2**

	China	Taiwan	Hong Kong	Average	Overall
Strongly Disagree	5.3%	3.3%	0.0%	4.3%	
Disagree	9.9%	6.5%	2.4%	8.3%	
Neutral	25.9%	25.2%	31.7%	26.1%	
Agree	50.0%	44.9%	53.7%	48.5%	
Strongly Agree	8.9%	20.1%	12.2%	12.8%	
Mean	3.47	3.72	3.76		3.65
Standard Derivation	0.886	0.879	0.903		0.878

Part C: “More than 50 per cent of online vendors provide useful and sufficient information”

**Online Trust3**

	China	Taiwan	Hong Kong	Average	Overall
Strongly Disagree	3.8%	3.3%	0.0%	3.4%	
Disagree	7.9%	13.6%	9.8%	9.8%	
Neutral	46.4%	38.3%	34.1%	43.0%	
Agree	40.1%	37.3%	48.8%	39.8%	
Strongly Agree	1.8%	7.5%	7.3%	4.0%	
Mean	3.28	3.32	3.54		3.38
Standard Derivation	0.925	0.918	0.941		0.924

Part D: “More than 50 per cent of online vendors keep promises and commitments”

**Online Trust4**

	China	Taiwan	Hong Kong	Average	Overall
Strongly Disagree	5.8%	4.2%	2.4%	5.1%	
Disagree	10.7%	7.1%	7.3%	9.2%	
Neutral	21.1%	38.3%	34.1%	27.6%	
Agree	59.9%	43.9%	46.4%	53.8%	
Strongly Agree	2.5%	6.5%	9.8%	4.3%	
Mean	3.43	3.42	3.54		3.46
Standard Derivation	0.895	0.889	0.901		0.893

Part E: “More than 50 per cent of online vendors’ services meet my expectations”

**Online Trust5**

	China	Taiwan	Hong Kong	Average	Overall
Strongly Disagree	3.8%	4.2%	4.9%	4.0%	
Disagree	13.7%	27.1%	14.6%	18.2%	
Neutral	62.2%	44.4%	46.3%	55.3%	
Agree	17.0%	21.0%	24.4%	18.8%	
Strongly Agree	3.3%	3.3%	9.8%	3.7%	
Mean	3.02	2.92	3.20		3.05
Standard Derivation	0.934	0.926	0.96		0.933

### 5.3.2 Online Security

Respondents' understanding of the online security issues was elicited by asking them to indicate their level of agreement with five items using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Table 5.7 Part E shows statement (5) had the highest mean scores of 4.14. More than 70% of respondents strongly agree or agree with this statement. The findings suggest respondents recognised a need of multiple third party certifications during online purchasing process. Several studies indicated that online vendors can enhance consumers' online trust through multiple third party certifications (Hoffman *et al.*, 1999).

Unsurprisingly, statement (4) received the lowest mean score (2.73), near 30% of respondents strongly disagree or disagree that it was safe to use credit card online. Previous research has also demonstrated that there is substantial risk when consumers use credit or debit card over the Internet (Pavlou, 2003). Although respondents recognised this credit card issue, over 40% of respondents were not sure about this issue, this may due to Chinese Internet users are more likely to use other payment system (e.g. Pay On Deliver) rather than using credit card online.

Table 5.7 Respondents' Online Security

Part A: "More than 50 per cent of online vendors implement security measures to protect Internet shoppers"

**Online Security 1**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	2.3%	6.5%	7.3%	4.0%	
Disagree	5.3%	20.1%	9.8%	10.5%	
Neutral	51.0%	43.5%	63.4%	49.3%	
Agree	33.3%	27.1%	17.1%	30.2%	
Strongly Agree	8.1%	2.8%	2.4%	6.0%	
Mean	3.40	3.00	2.98		3.12
Standard Derivation	0.912	0.91	0.917		0.915

Part B: "More than 50 per cent of online vendors usually ensure that transactional information is protected from accidentally being altered or destroyed during a transmission"

**Online Security 2**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	5.3%	8.4%	4.9%	6.3%	
Disagree	9.6%	14.0%	17.0%	11.5%	
Neutral	60.4%	40.2%	53.7%	53.3%	
Agree	16.5%	34.1%	22.0%	22.7%	
Strongly Agree	8.2%	3.3%	2.4%	6.2%	
Mean	3.12	3.10	3.00		3.07
Standard Derivation	0.95	0.949	0.969		0.949

Part C: “More than 50 per cent of online vendors provide sufficient information when I try to make a transaction”

**Online Security 3**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	2.3%	4.7%	2.4%	3.1%	
Disagree	5.3%	10.7%	4.9%	7.1%	
Neutral	21.8%	34.6%	26.8%	26.3%	
Agree	61.7%	41.1%	63.5%	55.0%	
Strongly Agree	8.9%	8.9%	2.4%	8.5%	
Mean	3.70	3.39	3.59		3.56
Standard Derivation	0.921	0.918	0.935		0.92

Part D: “I feel safe to use my credit card to purchase online in most cases”

**Online Security 4**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	3.1%	22.9%	26.8%	11.0%	
Disagree	13.2%	28.5%	17.1%	18.5%	
Neutral	49.7%	32.7%	39.1%	43.5%	
Agree	23.1%	14.0%	14.6%	19.6%	
Strongly Agree	10.9%	1.9%	2.4%	7.4%	
Mean	3.26	2.43	2.49		2.73
Standard Derivation	1.049	1.039	1.052		1.049

Part E: “It is important to me that the online vendor has multiple third party certifications”

### **Online Security 5**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	4.0%	1.9%	2.4%	3.2%	
Disagree	2.8%	1.4%	4.9%	2.5%	
Neutral	11.4%	19.6%	19.5%	14.6%	
Agree	20.6%	42.5%	34.1%	28.7%	
Strongly Agree	61.2%	34.6%	39.1%	51.0%	
Mean	4.32	4.07	4.02		4.14
Standard Derivation	0.885	0.876	0.887		0.884

### **5.3.3 Cultural Influence**

Table 5.8 presents the differences of the respondents across China, Taiwan and Hong Kong in terms of cultural influence. Respondents were asked to indicate their opinion on four statements regarding the cultural influence in e-commerce. Table 5.8 Part D shows statement (4) received the highest mean score (3.89), eliciting agree or strongly agree from 67% of respondents. The analysis suggests that majority of respondents are willing to spend time on checking product physical condition before purchasing online. This finding suggests that Chinese consumers were used to have psychical contact with product which could reduce the uncertainty of the trading parties.

Statement (1) elicited lowest agreement, achieving a mean of 3.27. Nearly 40% of respondents agreed that they would take advice from friends or family whether they should purchase online. Moreover, the standard deviations of statements (1) and (2) were relatively large (1.03 & 1.017) implying they were more distant from the mean.

More than 50% of respondents agreed or strongly agreed with statements (2) and (3). These findings suggest that family, friends and virtual community member have a direct influence on the implementation of e-commerce. This finding is consistent with previous studies. According to Chen *et al* (2008), Chinese respondents are more willing recommend the web site to others. Further, most Internet users would take advice from other users around them on Internet purchase decisions (Tan, 1999). Online forums and discussion board are regarded as a tool helping consumers to develop long-term trust with web sites and rather than online initial trust (Doney and Cannon, 1997).

Table 5.8 Culture Influence

Part A: "I would take my friend's / family's advice whether I should purchase online"

**Culture Influence 1**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	1.3%	7.5%	2.4%	3.4%	
Disagree	16.8%	18.7%	12.2%	17.1%	
Neutral	41.6%	37.9%	36.6%	40.1%	
Agree	33.2%	27.6%	39.0%	31.7%	
Strongly Agree	7.1%	8.3%	9.8%	7.7%	
Mean	3.28	3.11	3.41		3.27
Standard Derivation	1.029	1.031	1.018		1.03



Part B: “I would take advice from members of the virtual community whether I should online purchasing”

**Culture Influence 2**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	1.3%	7.0%	2.4%	3.2%	
Disagree	9.9%	7.9%	7.3%	9.2%	
Neutral	34.5%	31.8%	26.8%	33.1%	
Agree	38.3%	43.5%	41.5%	40.2%	
Strongly Agree	16.0%	9.8%	22.0%	14.3%	
Mean	3.58	3.41	3.73		3.57
Standard Derivation	1.013	1.01	1.022		1.017

Part C: “It is important to me that a person/ friend recommend a website to me before I purchase online”

**Culture Influence 3**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	6.3%	5.6%	2.4%	5.9%	
Disagree	11.9%	7.5%	4.9%	10.0%	
Neutral	26.4%	33.2%	53.7%	30.4%	
Agree	43.0%	38.7%	24.4%	40.4%	
Strongly Agree	12.4%	15.0%	14.6%	13.3%	
Mean	3.43	3.50	3.44		3.46
Standard Derivation	0.978	0.972	1.002		0.983

Part D: “For goods, checking the physical condition of similar products is necessary before I purchase online”

**Culture Influence 4**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	2.0%	2.3%	0.0%	2.0%	
Disagree	13.2%	5.7%	4.9%	10.2%	
Neutral	17.3%	26.6%	14.6%	20.2%	
Agree	36.5%	36.9%	53.7%	37.8%	
Strongly Agree	31.0%	28.5%	26.8%	29.8%	
Mean	3.81	3.84	4.02		3.89
Standard Derivation	0.97	0.952	1.003		0.97

### **5.3.4 Purchase Intention**

Table 5.9 shows five statements which were incorporated into the online questionnaire survey of this study to examine respondents' views on their purchase intention of e-commerce. Respondents were asked to indicate their views on each statement selecting a score range 1 (strongly disagree) to 5 (strongly agree). Descriptive statistics (Table 5.9 Part B) reveal statement (2) had the highest mean score of 3.73 with a standard deviation of 0.91. This suggests respondents tended to agree that they could save time by using e-commerce. Statements (3) and (4) had means of 3.72 and 3.45. More than 50% of respondents agreed or strongly agreed with these statements. Respondents' expressed less support for statement (5) which achieved a mean score of 2.95. Although respondents have a clear intention to continue using e-commerce for many reasons in future, it does not mean that e-commerce will replace traditional market methods or other alternatives.

Table 5.9 Part A shows statement (1) had the mean score of 3.48. 44.4% of respondents agreed or strongly agreed with statement (1), whereas only 12.6% strongly disagreed or disagreed with the statement. The findings suggest respondents recognised price sensitivity, especially more than 50% of Hong Kong respondents agreed or strongly agreed with this statement. These findings support those studies reported that the high price sensitivity of Chinese consumers (Kolodonsky, 1990; Cao, Fan & Woo, 1997; Fang, 1999).

Table 5.9 Respondents' purchase Intention

Part A: "I can save money by online purchase"

<b>Intention 1</b>					
	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	3.3%	3.3%	0.0%	3.0%	
Disagree	9.4%	11.2%	2.4%	9.6%	
Neutral	45.2%	40.2%	36.6%	43.0%	
Agree	31.7%	35.0%	51.2%	34.1%	
Strongly Agree	10.4%	10.3%	9.8%	10.3%	
Mean	3.37	3.38	3.68		3.48
Standard Derivation	0.933	0.926	0.944		0.931

Part B: "I can save time by online purchase"

<b>Intention 2</b>					
	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	2.3%	2.3%	2.4%	2.3%	
Disagree	2.8%	5.1%	4.9%	3.7%	
Neutral	38.8%	12.6%	24.4%	29.3%	
Agree	49.7%	47.7%	65.9%	50.1%	
Strongly Agree	6.4%	32.3%	2.4%	14.6%	
Mean	3.55	4.02	3.61		3.73
Standard Derivation	0.912	0.905	0.941		0.91

Part C: “Online purchase increases my productivity in shopping”

**Intention 3**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	1.0%	3.7%	2.4%	2.0%	
Disagree	11.7%	10.7%	7.3%	11.1%	
Neutral	15.2%	23.8%	9.8%	17.7%	
Agree	59.9%	46.3%	63.4%	55.6%	
Strongly Agree	12.2%	15.5%	17.1%	13.6%	
Mean	3.71	3.59	3.85		3.72
Standard Deviation	1	0.996	1.012		1

Part D: “I am likely to purchase online within a month”

**Intention 4**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	5.1%	5.1%	0.0%	4.7%	
Disagree	9.9%	10.3%	34.1%	11.6%	
Neutral	11.7%	30.8%	41.5%	19.9%	
Agree	40.1%	36.0%	17.1%	37.3%	
Strongly Agree	33.2%	17.8%	7.3%	26.5%	
Mean	3.87	3.51	2.98		3.45
Standard Deviation	1.066	1.056	1.079		1.066

Part E: “I intend to continue purchasing online rather than use other alternative”

**Intention 5**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	16.2%	4.6%	2.5%	11.5%	
Disagree	18.3%	20.1%	19.5%	19.0%	
Neutral	47.5%	44.4%	51.2%	46.7%	
Agree	14.0%	20.6%	26.8%	16.9%	
Strongly Agree	4.0%	10.3%	0.0%	5.9%	
Mean	2.71	3.12	3.02		2.95
Standard Deviation	1.01	1.003	1.029		1.01

### 5.3.5 Risk Perception

This section analyses respondents' perception of risk, including product risk and financial risk. Descriptive statistic analysis was employed to indicate respondents' strength of agreement with each statement. According to Corbitt et al. (2003), the respondents' Internet experience did not have significant impacts on respondents' risk perception on e-commerce. It can be argued that the location in different regions might reflect different risk perceptions and, these respondents' attitude toward e-commerce may be different between the areas.

Respondents' agreement level and mean scores are presented in Table 5.10. The statement (1) has the highest mean score (3.76) and 77.1 % of respondents agreed/strongly agreed that there was higher product risk compare with traditional ways of shopping. The statement (2) has the second highest mean score (3.74). Furthermore, Table 5.10 Part A and B reveal the mean scores for the first two statements are very close, implying that respondents concurred that e-commerce involve more product risk and financial risk. Statement (5) received the lowest support from respondents (mean = 2.34). Only 5.9 % of respondents would take medium/significant risk to make a purchase online.

Table 5.10 Respondents' risk perception

Part A: "Purchasing from Internet would involve more product risk when comparing with traditional ways of shopping"

**Risk 1**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	3.0%	7.5%	4.9%	4.6%	
Disagree	5.7%	2.3%	7.3%	4.6%	
Neutral	9.1%	19.6%	26.8%	13.7%	
Agree	45.9%	52.8%	53.7%	48.7%	
Strongly Agree	36.3%	17.8%	7.3%	28.4%	
Mean	4.07	3.71	3.51		3.76
Standard Derivation	1.026	1.018	1.023		1.024

Part B: "Purchasing from Internet would involve more financial risk comparing with traditional ways of shopping"

**Risk 2**

	China	Taiwan	Hong Kong	Percentage	Overall
Strongly Disagree	2.0%	6.1%	0.0%	3.3%	
Disagree	9.5%	4.2%	2.5%	7.2%	
Neutral	22.8%	29.0%	46.3%	26.3%	
Agree	36.3%	39.3%	26.8%	36.7%	
Strongly Agree	29.4%	21.4%	24.4%	26.5%	
Mean	3.82	3.66	3.73		3.74
Standard Derivation	1.026	1.021	1.01		1.024

Part C: “How well does the online vendor fit your personal requirements/needs”

**Risk 3**

	China	Taiwan	Hong Kong	Percentage	Overall
Absolutely Low	1.8%	3.8%	0.0%	2.3%	
Low	9.9%	12.1%	9.8%	10.6%	
Uncertain	47.2%	50.5%	70.7%	49.8%	
High	38.1%	31.3%	17.1%	34.5%	
Significantly High	3.0%	2.3%	2.4%	2.8%	
Mean	3.31	3.16	3.12		3.20
Standard Derivation	0.775	0.773	0.787		0.775

Part D: “What is the likelihood of getting a good bargain by purchase online”

**Risk 4**

	China	Taiwan	Hong Kong	Percentage	Overall
Very Unlikely	6.2%	13.1%	2.5%	8.3%	
Unlikely	27.2%	17.3%	19.5%	23.4%	
Uncertain	40.4%	34.1%	46.3%	38.7%	
Possibly	18.3%	27.1%	26.8%	21.7%	
Very Likely	7.9%	8.4%	4.9%	7.9%	
Mean	2.94	3.00	3.12		3.02
Standard Derivation	1.134	1.133	1.158		1.133



Part E: “How much risk would you tolerate when deciding to make a purchase online”

**Risk 5**

	China	Taiwan	Hong Kong	Percentage	Overall
Absolutely No Risk	39.4%	12.6%	7.4%	28.4%	
Low Risk	23.6%	35.5%	46.3%	29.0%	
Uncertain	32.7%	43.5%	39.0%	36.7%	
Medium Risk	2.5%	7.0%	4.9%	4.2%	
Significant Risk	1.8%	1.4%	2.4%	1.7%	
Mean	2.04	2.49	2.49		2.34
Standard Derivation	0.867	0.863	0.867		0.873

#### 5.4 ANOVA for Differences among Regions

A Concise description on the significance of how different regions affected the constructs of this study was explored through ANOVA (Table 5.11). This study used SPSS 14 software precedes t-test, by examining p-value to find any discrepancy between two independent sample averages. Independent samples means that the two are samples independent of each other, without any correlation. Two independent samples passing the same measure table test will allow the researcher to determine whether there is a deviation or not.

Table 5.11 shows the result of ANOVA for differences in the constructs of this study for these three regions comparison of the respondents' online shopping experiences. The p-value large than 0.5 ( $P > 0.5$ ) tells us there is not a significant difference between these regions. (Risk 5 - How much risk would you undertakes to online purchasing). The reason may be Chinese were significantly more risk seeking. In collectivistic cultures, family and social network will help out any group member who loses a lot of money after selecting a risky option (Hsee and Weber, 1999).

The F statistic is large and is significant as indicated by a small p-value of 0.000 ( $P < 0.001$ , Intention 2 - save time by online purchase, Security 5 - online vendor has multiple third party certifications). So there is a very significant difference in purchase intention 2 and online security 5 between these three regions. This results show that time saving advantage of e-commerce may not be agrees by all respondents across these three regions. Other items (p-value of 0.05 or less) only have significant interaction between three regions.

Table 5.11 Analysis of Variance

**ANOVA**

		Sum of Squares	df	Mean Square	F	Sig.
OnlineTrust1	Between Groups	7.913	3	2.638	2.721	0.044
	Within Groups	489.557	646	0.969		
	Total	497.470	649			
OnlineTrust2	Between Groups	4.987	3	1.662	2.135	0.095
	Within Groups	393.214	646	0.779		
	Total	398.200	649			
OnlineTrust3	Between Groups	9.284	3	3.095	3.683	0.012
	Within Groups	424.378	646	0.840		
	Total	433.662	649			
OnlineTrust4	Between Groups	4.671	3	1.557	1.961	0.119
	Within Groups	400.869	646	0.794		
	Total	405.540	649			
OnlineTrust5	Between Groups	2.335	3	0.778	0.893	0.445
	Within Groups	440.325	646	0.872		
	Total	442.660	649			
OnSecurity1	Between Groups	4.042	3	1.347	1.616	0.185
	Within Groups	421.007	646	0.834		
	Total	425.049	649			
OnSecurity2	Between Groups	5.186	3	1.729	1.928	0.124
	Within Groups	452.704	646	0.896		
	Total	457.890	649			
OnSecurity3	Between Groups	11.120	3	3.707	4.467	0.004
	Within Groups	419.045	646	0.830		
	Total	430.165	649			
OnSecurity4	Between Groups	14.012	3	4.671	4.326	0.005
	Within Groups	545.225	646	1.080		
	Total	559.238	649			
OnSecurity5	Between Groups	13.922	3	4.641	6.116	0.000
	Within Groups	383.190	646	0.759		
	Total	397.112	649			
Culture1	Between Groups	9.725	3	3.242	3.096	0.027
	Within Groups	528.805	646	1.047		
	Total	538.530	649			

Culture2	Between Groups	12.989	3	4.330	4.268	0.005
	Within Groups	512.312	646	1.014		
	Total	525.301	649			
Culture3	Between Groups	12.016	3	4.005	4.228	0.006
	Within Groups	478.408	646	0.947		
	Total	490.424	649			
Culture4	Between Groups	5.413	3	1.804	1.927	0.124
	Within Groups	472.725	646	0.936		
	Total	478.138	649			
Intention1	Between Groups	6.302	3	2.101	2.441	0.064
	Within Groups	434.516	646	0.860		
	Total	440.817	649			
Intention2	Between Groups	15.951	3	5.317	6.630	0.000
	Within Groups	405.000	646	0.802		
	Total	420.951	649			
Intention3	Between Groups	10.756	3	3.585	3.639	0.013
	Within Groups	497.543	646	0.985		
	Total	508.299	649			
Intention4	Between Groups	18.564	3	6.188	5.589	0.001
	Within Groups	559.090	646	1.107		
	Total	577.654	649			
Intention5	Between Groups	12.508	3	4.169	4.160	0.006
	Within Groups	506.109	646	1.002		
	Total	518.617	649			
Risk1	Between Groups	12.649	3	4.216	4.094	0.007
	Within Groups	520.074	646	1.030		
	Total	532.723	649			
Risk2	Between Groups	13.571	3	4.524	4.398	0.005
	Within Groups	519.439	646	1.029		
	Total	533.010	649			
Risk3	Between Groups	8.294	3	2.765	4.702	0.003
	Within Groups	296.948	646	0.588		
	Total	305.242	649			
Risk4	Between Groups	11.627	3	3.876	3.057	0.028
	Within Groups	640.176	646	1.268		
	Total	651.804	649			

Risk5	Between Groups	0.959	3	0.320	0.418	0.740
	Within Groups	386.149	646	0.765		
	Total	387.108	649			

## 5.5 Summary

This chapter has used descriptive statistics to present respondents' view on e-commerce and identify characteristics of different factors influence. Some interesting results were found. For example, respondents tend to trust virtual community members than a family member, which may reflect that the consequences of their behaviour and the effect of their actions on in-group members.

In addition, web based survey surprisingly were favoured by respondents, and this method can easily target a large and widespread respondents who use e-commerce. Due to Chinese conservative characteristics, the answers tend to be medium range which is neutral and less strong emotion to express their thoughts in this survey, unless he or she really had strong opinion about specific statement.

Some of these national cultural characteristics have been demonstrated in e-commerce in China, which confirm on the basis of Hofstede's (2001) cultural value framework.

Finally, most of respondents knew there were some risk for online purchasing and still willing to take the risk for online purchasing. This result indicated that they may expect some likelihood of negative consequence during online purchasing process.

It is also important to ascertain whether there is a pattern of differences in responses measured by regional characteristics and what factors influence respondents' intention to use e-commerce.

Next Chapter will employ the structural equation modelling (SEM) techniques to test hypotheses and compare with the differences for a series of questions.

## **CHAPTER 6**

### **ANALYSIS OF RESULTS II AND DISCUSSION**

#### **6.1 Introduction**

The aim of this chapter is to use different factors and their influence to analyse respondents' responses to each question. The purpose of this analysis is to discover whether differences in geographic region, online trust, online security, cultural influence, purchased intention and risk perception have impact on responses to each proposition in the questionnaire, and at same time ascertain those factors influencing respondents' decision to use e-commerce. The analysis and discussion of findings is presented on a section by section basis. Section 6.2 discusses the methodology employed and explains why the factors have been used. This section also provided theoretical explanations for Structural Equation Modelling (SEM). Section 6.3 presents testing of the study's hypotheses, which includes assessing cultural influence and responses relating to the perception of risk. And this section considers responses concerning the online trust and online security issues. Section 6.4 provides a discussion of results, and finally Section 6.5 provides a summary to this chapter.



## 6.2 Structural Equation Modelling

The data were analysed with structural equation modelling (SEM) techniques. SEM was chosen because of its advantages over other methods. SEM can be used as an alternative to multiple regression, path analysis, factor analysis, time series analysis, and analysis of covariance which can be seen as special cases of SEM (Garson, 2002; Kline, 2005). It is more powerful in that it "takes into account the modelling of interactions, nonlinearities, correlated independents, measurement error, correlated error terms, multiple latent independents each measured by multiple indicators, and one or more latent dependents also each with multiple indicators" (Garson, 2002. p.38). The result is more accurate parameter estimation and a more realistic analysis (Kline, 2005; Bollen, 1989). SEM has other advantages such as allowing more flexible assumptions, the ability to test models overall rather than individual coefficients, the ability to model error terms and handle difficult data (Kaplan, 2000; Garson, 2002).

The sample size obtained in the survey must be sufficient to analyse the hypothesised model using SEM. According to Anderson and Gerbing (1988), a sample size of 150 is needed to obtain parameter estimates that have standard errors small enough to be of practical use in SEM. Also, a rule of thumb is that the ratio of sample size to the number of free parameters should be at least 5:1, and a ratio of about 10:1 is desirable (Byrne, 2001; Bentler & Chou, 1987). A meta-analysis performed by Baumgartner and Homburg (1996) showed that the average ratio of sample size to number of parameter estimated is 6.4. According to these guidelines, the sample size used in this analysis is sufficient, at approximately 10:1.

Structural Equation Modelling (SEM) was conducted by using SPSS 14. A multiple-group confirmatory factor analysis (CFA) was conducted to test the cultural influence measurement invariance and the hypothesis that the same model form and parameter structure applies to the China, Taiwan and Hong Kong samples. First, the three data sets were tested separately to ensure that the model fits the data for each group. Then the multiple group models without constraints on the parameters were estimated simultaneously to test if the same model form holds across groups. This unconstrained model was then compared with a constrained one, in which equality constraints on factor structure were placed across the three samples. If the fit of the unconstrained model is not significantly different from the fit of the constrained one, then the factor structure does not differ across the samples. The results indicate that the fit of the unconstrained and constrained were not significantly different, thereby implying similar factor structure across samples.

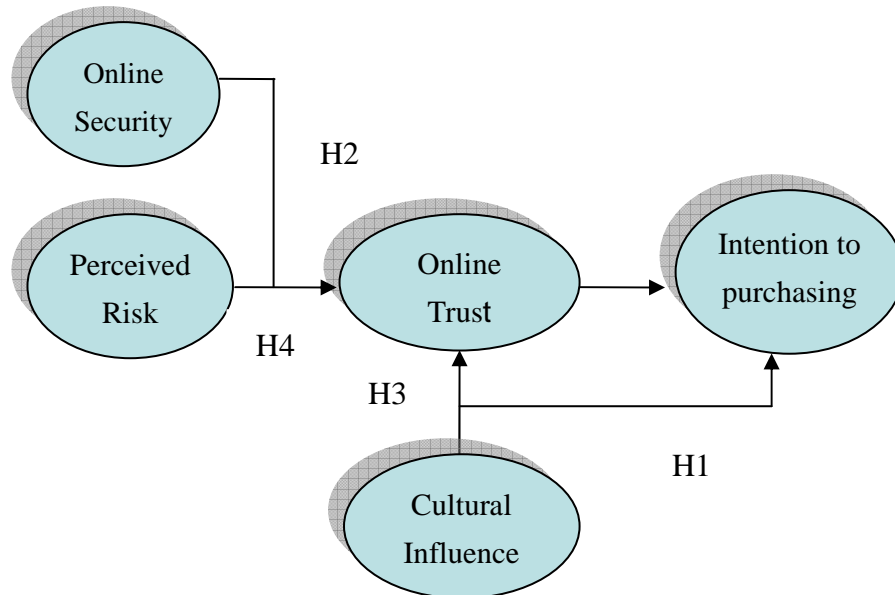
Based on the data gathered, this multivariate analysis that includes relevant latent variables was conducted to test whether the proposed model showed the significant structural relationships among these variables. Exploratory, principal component factor analysis was conducted to determine the extent to which the latent variables were discriminate. The principal component factor analysis was conducted using a Varimax rotation. The objective with the explanatory factor analysis was to cull out measurement items that did not load on the appropriate latent variable. Results suggested that several items can be combined from scales in order to achieve a high level of reliability and validity.

### **6.3 Hypotheses Testing**

This section attempts to test the hypotheses to discover whether cultural influence, online trust and security issues have an impact on consumers' intention to purchase online. In this study, regression analysis investigated whether a positive relationship existed between two specified constructs. Also, in order to specify how much of variance on the dependent variable was explained by the independent variable, multiple regression analysis was conducted. An examination of the significant correlations makes intuitive sense.

As discussed in early chapter, previous studies indicate there is an association between the effect of culture on online consumer's disposition to trust (Tan and Sutherland, 2006). The importance of online trust has been suggested by several studies (Tan and Sutherland, 2006; Chai and Pavlou, 2002; Jarvenpaa and Tractinsky, 2003). Jarvenpaa and Tractinsky (2003) posit that culture influences online trust and risk perception. Gefen and Heart (2006) also found differences in the effectiveness of culture on trust between online consumers in the U.S. and Israel. However, Liu et al. (2004) found no evidence of cultural differences related to privacy, trust and behavioural intention between American and Taiwanese Internet users. Tan (1999) noted that higher security could reduce online consumer level of risk perception during online shopping. Based on the literature, hypotheses were developed as follows (Figure 6.1):

Figure 6.1 Research model with hypotheses



- H1: Cultural influence indirectly affects consumers' intention to adopt online purchasing.
- H2: Online security indirectly affects consumers' intention to adopt online purchasing through online trust.
- H3: Cultural influence indirectly affects consumers' intention to adopt online purchasing through online trust.
- H4: Perceived risk indirectly affects consumers' intention to adopt online purchasing through online trust.

H1: Cultural influence indirectly affects consumers' intention to adopt online purchasing.

Multiple regression was run to determine significant relationships between cultural influence and consumers' purchase intention (Table 6.1). This combination of four items of cultural influence ( $F=8.11$ ,  $p=0.000$ ). The model summary gives R square 0.060 and adjusted R square 0.053. The beta weights suggested that Culture item 2 (advice from Virtual Community) contributed most to predict purchase intention. This model predicted 5% of the variance in purchase intention which indicates a very small effect. The P-value from the Table 6.1 is smaller than 0.1 ( $P<0.1$ ), this result indicates that the hypothesis (H1) can be accepted. This result suggests that cultural influence has fairly impact on e-commerce.

This result supports Wang's (1999) study which shows that consumer behaviour could be influenced by culture. This result also consists with Peng's (2007) study, who reported that there were fair cultural differences in consumer attitude between Taiwan and Hong Kong.

Table 6.1 Multiple Regression of Culture items on Purchase Intention

<b>Explanatory Variable</b>	<b>b</b>	<b>SE</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
Social Factors 1	-.054	.050	-0.56	-1.079	.281
Social Factors 2	.208	.049	.211	4.204	.000
Word of Mouth	.114	.055	.112	2.055	.040
Purchasing Attitude	-.126	.048	-.122	-2.615	.009

Dependent Variable: Purchase Intention

**F=8.109 p=.000 R square= .060 Adjusted R square = .053**

H2: Online security indirectly affects consumers' intention to adopt online purchasing through online trust.

Multiple regression was conducted to determine the influence of online security issues through online trust (Table 6.2). This combination significantly predicted consumers' purchase intention ( $F=30.588$ ,  $p=0.000$ ). The result showed a positive relationship between security issues and online trust. Except for Security item 2 (secure transaction), the other four items had significant beta weights for the model. The beta weights suggested that security item 1 (security measure) contributed most to influence consumers' intention to adopt e-commerce and security item 5 was the second best predictor of consumers' intention. The coefficient of the adjusted R square was .233. This indicated that only 23% of the variance in purchase intention was explained by the model, indicating a small effect. The P-value from the table 6.2 is smaller than 0.1 ( $P<0.1$ ), this result indicates that the hypothesis (H2) can be accepted. This result suggests that online trust has indirectly impact on e-commerce through online security.

It is interesting to note that many security concerns are common to Internet users worldwide from previous studies (Ess, 2006; Floridi, 2006; Agrawal et al., 2003). The positive relationship between security and attitude towards online shopping was empirically tested by Vijayasarathy (2004) and O'Cass and Fenech (2003). The influence of privacy and security on users' acceptance has been supported by several authors in the context of e-banking services (Sathye, 1999; Liao and Cheung, 2002; Poon, 2008).

Table 6.2 Multiple Regression of Security items on Purchase Intention

<b>Explanatory Variable</b>	<b>b</b>	<b>SE</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
Security 1	.178	.059	.163	3.038	.003
Security 2	.065	.057	.062	1.156	.248
Security 3	.172	.056	.158	3.068	.002
Security 4	.131	.042	.138	3.099	.002
Security 5	.181	.046	.160	3.910	.000

Dependent Variable: Online Trust

**F=30.588 p=.000 R square= .233 Adjusted R square = .226**



H3: Online trust indirectly affects consumers' intention to adopt online purchasing through cultural influence.

Multiple regression was conducted to determine the influence of cultural issues through online trust (Table 6.3). This combination of four items of cultural influence issues ( $F=3.023$ ,  $p=0.018$ ). The model summary gives R square (.023) and adjusted R square (.016). This indicated that only 16% of the variance in purchase intention was explained by the model, indicating a small effect. The P-value from the table 6.3 is smaller than 0.1 ( $P<0.1$ ), this result indicates that the hypothesis (H3) can be accepted. This result suggests that culture issues had indirectly impact on e-commerce through online trust.

This result supports that reported in studies by Venkatesh and Davis (2000), Venkatesh and Morris (2000). According to Morris and Venkatesh (2000), cultural influence may come from family members, relatives, friends, classmates and colleagues, especially in a collective society. In addition, work environment may affect individual behaviour intention of adopting innovative means to accomplish tasks. The influence of social groups can be very significant, because it is not uncommon that a member of a social group usually observes implicit commitments of the group identity such as fashion, style, taste and consumption behaviour, and opinions spreading among group members. However, the result is contradicted with other studies that reported by Jarvenpaa and Tractinsky (1999) who found no significant cultural difference in the antecedents of trust. The possible reason may be the difference in the specific online vendors (bookstores) between the current and the previous study.

Table 6.3 Multiple Regression of Culture items on Online trust

<b>Explanatory Variable</b>	<b>b</b>	<b>SE</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
Social Factors 1	-.001	.051	-.001	-.024	.981
Social Factors 2	.041	.050	.042	.824	.411
Word of Mouth	.143	.056	.141	2.544	.011
Purchasing Attitude	-.084	.049	-.082	-1.711	.088

Dependent Variable: Online trust

**F=3.023 p=.018 R square= .023 Adjusted R square = .016**

H4: Perceived risk indirectly affects consumers' intention to adopt online purchasing through online trust.

Multiple regression was conducted to determine the influence of perceived risk through online trust (Table 6.4). This combination of four items of perceived risk ( $F=26.395$ ,  $p=0.000$ ). Except for Risk items 1 (product risk) and 2 (financial risk), the other three items had significant beta weights for the model. The beta weights suggested that Risk item 3 contributed most to influence consumers' intention to adopt e-commerce and Risk item 4 (bargain) was the second best predictor of consumers' intention. The model summary gives R square (.208) and adjusted R square (.200). This indicated that only 20% of the variance in purchase intention was explained by the model, indicating a small effect. However, three subjects in this group appear to have a significantly higher level of significance than subjects majoring in the table with the p value 0.000 ( $<0.01$ ). The P-value from the table 6.4 is smaller than 0.1 ( $P<0.1$ ), this result indicates that the hypothesis (H4) can be accepted. This result suggests that perceived risk had indirectly impact on e-commerce through online trust. The result also consistent with the findings that Jarvenpaa et al. (2000) revealed, it has been proved that an indirect effect of trust on purchase intention through risk perception.

The result consistent with that reported by Vijayasarathy and Jones (2002) and Cunningham et al. (2005) who proved that perceived risk is a significant factor in relation to consumer behaviour.

Table 6.4 Multiple Regression of Risk items on Purchase Intention

<b>Explanatory Variable</b>	<b>b</b>	<b>SE</b>	<b>Beta</b>	<b>t</b>	<b>Sig.</b>
Risk 1	-.028	.047	-.029	-.596	.551
Risk 2	-.012	.047	-.012	-.247	.805
Risk 3	.361	.055	.280	6.566	.000
Risk 4	.183	.037	.207	4.904	.000
Risk 5	.165	.047	.144	3.524	.000

Dependent Variable: Online Trust

**F=26.395 p=.000 R square= .208 Adjusted R square = .200**

### **6.31 Correlation**

In order to test the proposed model, Pearson's correlation analysis was adopted to test the relation between online trust and online security. Pearson's correlation is the appropriate statistical analysis to test the linear relationship between two variables (Table 6.5). The correlation between online trust and online security is 0.321. Values for the correlation between online trust and online security are identical (Appendix III). Since the correlation coefficient is not large (Near 0), the author believe there is only moderate association of the correlation changes. Online security item 5 (online vendor has multiple third party certifications) only has a very weak association with all online trust items. The sig value of correlation is 0.000. Since the sig value is less than 0.05 this means there is a significant relationship between online trust and security issues. This result is consistent with Koufaris and Hampton-Sosa's (2004) study, who found perceived security control of the web site strongly influenced initial trust in the e-commerce. If the online consumers are less concerned about unauthorized use of or illegal access to their personal and financial data by third parties, they will have greater trust in the e-commerce, which in turn will lead to higher intention to use it. Thus, online vendors should improve their web security features in order to enhance the online consumers' trust in the e-commerce.

Table 6.5 Correlations between Online Trust and Online Security (0.321)

		OnlineTrust1	OnlineTrust2	OnlineTrust3	OnlineTrust4	OnlineTrust5
OnSecurity1	Pearson Cor.	0.406	0.378	0.392	0.408	0.376
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	649	649	649	649	649
OnSecurity2	Pearson Cor.	0.362	0.319	0.320	0.370	0.304
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	649	649	649	649	649
OnSecurity3	Pearson Cor.	0.357	0.439	0.438	0.455	0.331
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	649	649	649	649	649
OnSecurity4	Pearson Cor.	0.413	0.167	0.286	0.297	0.266
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	649	649	649	649	649
OnSecurity5	Pearson Cor.	0.124	0.286	0.226	0.173	0.138
	Sig. (2-tailed)	0.005	0.000	0.000	0.000	0.002
	N	649	649	649	649	649

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## **6.4 Discussion**

The results of the study and the associated research point out to three major areas that continue to impede and constrain the development of e-commerce in China, Taiwan and Hong Kong: online trust, security issues and culture influence.

### **6.41 Online Trust**

Even though the percentage of population in China, Taiwan and Hong Kong using Internet more frequently has risen over the many years that the reliable and secure technology has been available, consumers are still highly concerned with privacy issues. According to Consumer Internet Barometer (2002), despite the fact that the percentage of online shoppers who trust that their personal information will be safe rose from 27 percent to 31 percent over the past year, only 21 percent of Internet users believe that online purchasing data transactions are secure, a decrease over the past year (Nua Internet Surveys, 2002).

These research findings also show that these same concerns are major issues for Chinese consumers conducting online transactions, and are even amplified as a result of Chinese cultural characteristics. Some of respondents complained about existence of trust-worthy online merchants, Internet security and credit card security. Two incidents provide excellent examples as cases in point. A female respondent aged between 19-30 years old from Mainland China said “Online buying is fun and interesting”, but she added there were a number of problems. She continued saying “I recently tried to buy clothes online because the price was bargain. But I had to register first, and then they asked me details about myself, so I just gave up”. She also

said she would be reluctant to use a credit card to buy online. “I personally prefer to pay in cash when my goods received, and I would check the quality and condition of goods before any payment”. Another one stated “ I like to purchase from the Internet, but it does not mean that I am not going to buy from traditional shop where you can see the goods, and make sure it is what you want”. These statements are a reflection of the Chinese culture and the prevailing attitudes among Chinese consumers. The experience from one of the respondents is also noteworthy and he demonstrates the lack of physical touch in e-commerce. The respondents tried to buy an airline ticket over the Internet, was subjected to three price changes, within a two hour period by a travel agent as he mysteriously and continuously ‘discovered’ more restrictions and conditions. These incidents may be caused by the existing inadequate infrastructure and business transactions system; however, they continue to reinforce the mistrust Chinese have developed against unseen institutions and transaction partners, over the many centuries. As one of Chinese gentleman, who has travelled extensively and conducted business outside of China put “History and reality told us not to trust the system or the people’s honour! E-commerce is a radical behaviour that goes contrary to experience and culture. There is no ‘western honour system’ in China”. This statement is an excellent representation of the level of trust in and cultural attitude towards commerce in China.

The empirical studies suggest that the most important antecedent of purchase intentions is trust. Therefore, online consumers tend to increase their motivation to use the e-commerce when these online vendors are perceived as honest. Perceived trust leads the consumers to be willing to believe that the online vendors are able to provide them with the services offered. For instance, trusting perceptions directly influence the decision to use their e-commerce, which is consistent with prior studies



(Bhattacharjee, 2002; Kim et al., 2008).

## **6.42 Security**

Security issues involve the human factor. No matter how advanced and stringent the security technological solutions, humans are generally the first line of defence to secure information assets. Security breaches, such as virus infections, identity theft, and dumpster diving, are the direct cause of carelessness and a lack of knowledge and action on the part of users. Technological solutions are effective only after users are knowledgeable and skilful at using them. Therefore, security issues can be more important than the technology factor in contributing to the success of today's information security.

Even after so many years of catalogue sales and extensive acceptance of Internet and e-commerce, and availability of infrastructure that is functional and reliable, there are still concerns of security issues among China, Taiwan and Hong Kong consumers.

People in different areas have different levels of security sensitivity depending upon their social and technical environments. These socio-technical backgrounds have resulted in the formation of varying security awareness levels of general users of security risks. Due to differences in information communications and telecommunication infrastructure, varying forms of security risks (e.g. external, internal, virtual, physical, and natural risks) have been formed and adapted. This has gradually shaped the way public users perceive and respond to security threats.

For instance, one study indicated that privacy as an example is more oblivious to

people in the collectivism society than to people in the individualism society (Floridi, 2006). To people in Hong Kong and China privacy protection does not mean that citizens have the right of being autonomous (Ess, 2006). As a result, Chinese citizens in those two regions enjoy comparatively limited protection of data privacy in the area of e-commerce.

Surprisingly, perceived privacy was not a determinant of perceived trust. A possible explanation is that experienced internet users are more familiar with security technologies; they easily recognise features such as certificates or encryption keys. Since these security characteristics guarantee almost total privacy, the relative importance of privacy concerns for these users is lower. This finding provides further support for prior research. Thus, Belanger et al. (2002) argued that Internet users generally understand the concept of security better than privacy because security is a more concrete concept, and they also showed that security features were more important than privacy statements. Kim et al. (2008) empirically showed that security protection mechanisms are more important in consumers' behaviour than privacy. Pavlou and Chellappa (2001) found that the influence of privacy was weak in comparison with the strong influence of perceived security on trust. Additionally, the concern about privacy is referred to the control over secondary use of information provided to the online vendor. The effect of privacy on trust might be moderated by online consumer perceptions of the reputation of the online vendor.

Because China lacks network ID authentication and online transaction credit system, credit, security and privacy become the spotlight of online shopping (Liu et al, 2004). It is important for online retailers to create a safe online shopping environment, provide convenient and safe payment methods, protect customers' privacy and

guarantee financial security.

Collectivists (Chinese) Internet users have a predisposition to associate security issues with financial risks (Kucuk, 2002). For this reason, collectivists are less receptive to online individual banking, because its perceived risks are higher than traditional physical banking (Charbaji and Jannoun, 2005). The result of this study also indicated that same consequence.

### **6.43 Risk**

As a matter of fact, the consumers are still concerned about the unpredictable risk associated with e-commerce. They would usually not purchase such goods as clothes and shoes from online vendors, even if they were interested in e-commerce. This is because it is impossible to touch and try these kinds of products in virtual shopping environment. In addition, there is a possibility of getting inappropriate or low quality products from online vendors. Therefore, a responsible online vendor should offer detailed quality of product information on the website. It should also provide product warranty and logistics support in order to reduce consumer concern. More importantly, it should inform the customers that serious security procedures have been implemented to effectively protect credit card payment and personal privacy associated with online transactions.

According to Chaudhuri and Holbrook's study (2001), consumers may feel uncertain about purchasing products online, if they need to give out their personal information such as credit card numbers. In this vulnerable situation, consumer's online trust of a company can play an important role in reducing any uncertainty that consumers have

about online shopping. Consumers expect the company they trust to provide optimum information and eventually reduce their uncertainty of the online transactions as well (Lee and Johnson, 2002). This information confirmed that consumers feel more confident with online shopping when they shop through the vendor they trust.

Chinese respondents consider the relationships between various perceived risk variables differently. This is logical because when perceiving great risk, consumers are more likely to make efforts to minimise any negative outcomes or to enhance positive outcome certainty. This type of action is well-known in risk reduction behaviour (Roselius, 1971).

#### **6.44 Culture**

The results of the study point out that culture is one of the major factors that continue to impede and constrain the development of e-commerce in China, Taiwan and Hong Kong. According to Hofstede's (1991) social anthropology theories, culture is the "collective programming of the mind" to distinguish among people of different countries. As discussed in early chapter, previous studies (Jarvenpaa and Tractinsky, 1999; Teo and Liu, 2005) indicated there is an association between culture influence and consumer attitude towards e-commerce. Hofstede (2001) suggest that the cultural dimensions of individualism-collectivism likely affect consumer intention to purchase online. Kim et al. (1994) identified that most of eastern Asia societies were collectivist cultures.

Collectivists (e.g. Chinese) react negatively to job insecurity, whereas individualists (e.g. Americans) react more positively (Probst and Lawler, 2006). Collectivists have a

predisposition to associate security issues with financial risks, whereas individualists are inclined to accept security as a part of products or services (including quality, convenience and satisfaction) or privacy issues (Kucuk, 2002).

Great China Region has a highly accessible urban environment around which there are many retail stores and shops. The consumers can easily purchase whatever they need within a reasonable time, because the retail facilities are in walking distance and open until late evening. They can also conveniently touch and try on fashionable goods at the brick-and-mortar stores and shops. Actually, many have traditionally adapted the local retail market environment. Even window-shopping with friends becomes a habit (a reflection of collectivist culture). They may not easily change shopping habit and purchasing behaviour, because the value and belief that usually develop from childhood and reinforce throughout life might affect individual behaviour (Hasan and Ditsa, 1999).

Considering the local retail market environment together with the cultural influence, the service providers in the business sector are suggested to concurrently operate retail business in dual tracks of brick-and-mortar stores and virtual stores. They should effectively utilize the Internet to facilitate traditional businesses and carry out online services. Today, consumers can easily browse the Internet to look for products and services without request for assistance from others, if they have computer knowledge and Internet skill.

While Lynch and Beck (2001) observed no significant regional differences in consumers' tendencies to take risks among online buyers in 20 countries, a more intriguing finding this study revealed is that a culture's uncertainty avoidance had a

significant, but positive effect on B2C e-commerce adoption and diffusion levels. Some early research at the individual level did suggest a minor role of risk perceptions in the adoption of online shopping (Jarvenpaa and Todd, 1997), but this finding contradicts the main results of past studies at the individual level, which typically suggest an inverse relationship between consumers' perceived risk and their adoption of purchasing online. On the other hand, this finding did echo what was reported by Park and Jun (2003) – Koreans (high uncertainty avoidance) were more risk-taking than their American counterparts (low uncertainty avoidance) in internet buying behaviour. The 'cushion hypothesis' proposed by Hsee and Weber (1999) may provide a plausible explanation for this unexpected positive effects of uncertainty avoidance on the adoption and diffusion of B2C e-commerce.

Hsee and Weber (1999) found that the Chinese were significantly more risk seeking than the Americans, arguing that in collectivistic cultures like China, family and social network will help out any group member who loses a lot of money after selecting a risky option. In contrast, in individualist cultures such as the US, a person is expected to bear the consequences of his/her own decision. The collectivism acts as a cushion against possible losses, in other words, a social diversification mechanism of risks. According to Hofstede's study (2001), the high uncertainty avoidance countries tend to be collectivistic-oriented as indicated by the significant negative correlation between the two dimensions, the cushion hypothesis may be used to explain the results of this research. In addition, it is noteworthy that, with the rapid advancement of information and communications technologies, it is expected that the perceived risk associated with internet buying will decrease accordingly (Park and Jun, 2003). In other words, perceived risk may be a decreasingly important predictor of consumers' online buying behaviour. Based on the findings of this study, an

obvious conclusion is that the results of previous research at the individual level may not be automatically extendable to the country level. Careful interpretations at the country level are particularly warranted and additional research is needed to shed more light on the relationship between this dimension and the adoption of B2C e-commerce, especially now that e-commerce is taking off worldwide.

#### **6.441 Touch and Feel**

In the e-commerce environment, products are intangible. Customers are not able to touch, taste, observe, smell or listen to the goods as they do in traditional ways. To know the quality and functionality of a commodity, customers can only rely on the pictures and descriptions of the goods on the web pages. Therefore, to enhance customers' degree of satisfaction, B2C web sites should provide clear and understandable information to online shoppers. Meanwhile, online vendors should provide descriptive information of the goods that is as complete as possible, including the colour, functionality, producer, model, etc. This is to ensure the customers can make purchase decisions. Koivumaki (2001) finds that displaying pictures of the goods has greater influence on customer's purchase decision than just listing out the product description.

There are still concerns of 'touch and feel' issues among China, Taiwan and Hong Kong consumers. This study shows that these are also the major areas of concern among most respondents. The idea of buying goods (unless they are homogenous quality such as books, CDs, VCDs and airplane tickets) that one cannot see and touch, and the sellers from thousands of kilometres away may take some 'getting used to' for an ancient culture such as the Chinese, who are used to face-to-face transactions, familiarity with the other party (strong individual relationship and long term association between the parties), and enjoy the satisfaction from winning business negotiations (they are willing to employ a variety of tactics to get the best deal). As one respondent stated "I like buying over the Internet, but it does not best going to an actual shop where you can see what you are buying and make sure it is what you want". All of these long standing cultural traits are undermined by and are contrary to



the depersonalisation associated with e-commerce and business systems designed to sell products online. Latest CNNIC figures show that 25 percent of China's 253 million web users have bought online, compare to 57.3% online shopping rate in South Korea and 66% in the United States (China Internet Network Information Center, 2008).

In addition, the highly concentrated local retail environment discourages consumers to consider online shopping. Those consumers who have a shopping habit at traditional stores are unlikely to go for e-commerce, because their habit cannot be easily changed for the time being. Actually, the traditional business continuously evolves in Hong Kong. At the same time, online shopping has also been developed. Therefore, it seems feasible for the service providers to simultaneously operate online storefronts in addition to traditional business. However, it is important for them to provide consumers with quality products, excellent service, and useful information based on advanced information and communications technology. Moreover, the online vendors should pay attention to cultural influence on consumer behaviour. The present analysis shows that different region group has a slightly effect on individual behavioural intention to use e-commerce. It is likely a popular phenomenon in a collective society in which one tends to follow if friends, relatives, classmates and co-workers are interested in e-commerce. The findings of this study justify that there is a contextual reality, i.e. social influence together with so called word of mouth is important for spreading the image of branded products and services.

However, according to the CFO of Eachnet.com (Hennock, 2002), about 40 per cent of the sellers using this online auction site to select buyer in their hometown, so that they can trade the goods for cash in face-to-face. While they use the website as an

electronic tool for advertising and bidding, and they prefer to keep actual transaction localised. Eachnet is very much like eBay, a B2C web site which allow users to trade with each other. However, it is different from the eBay for the payment, when a transaction is completed, people can physically meet to exchange goods and money. It only operates in large cities like Shanghai (45%) and Beijing (39%) and it does not have as broad coverage as eBay (CNNIC, 2008). Currently, this combination (virtual storefront and physical distribution center) business model may be the preferable way for businesses to participate in e-commerce in China. This business process not only overcomes the touch-and feels concerns, but also helps develop a physical relationship between the two parties (buyer and the seller) involved in the transaction, these results address the most recognised cultural characteristics of the Chinese consumers.

#### **6.442 Debt is Not Good**

With estimated RMB410 billion (USD50 billion) in savings stashed away, China still exhibits the characteristics of cash society (Tan and Ouyang, 2004). This societal characteristic provides some evidence that Chinese adhere to a way of thinking that debt is not good and as such, even if good credit card facilities existed, they may be wary of using credit card to buy goods on the internet. This may be also caused by non-confidence with the security of the Internet. This cultural characteristic is supported by other research (Efendioglu and Yip, 2004).

Some studies think price sensitivity may actually be lower online than offline (e.g., Degeratu et al., 2000; Lynch and Ariely, 2000; Shankar et al., 2001), one most commonly cited reason for online shopping is price, and many early online marketers

used price as bait to lure consumers to their sites (Chen and Chang, 2003). Moreover, the Chinese are quite sensitive to price and are accustomed to comparing prices. These findings are consistent with the study of Lu (2005). Therefore, the product price has fairly significance with customers' purchase intention in Chinese cultural influence.

From the culture perspective, consumers in Taiwan have a lower degree of trust propensity in business environments (Huff and Kelley, 2005); therefore, Taiwan online consumers require more and highly positive perceptions toward the web sites in order to enhance their online initial trust.

#### **6.45 Other Factors Influence**

One fact of this study of behavioural intention toward the online store was willingness to recommend the online store to others. This study shows that the more consumers feel confident with shopping at the online store, the higher behavioural intention will be towards the online store, indicating that consumers are more willing to recommend the online store to others. According to Emergence Marketing (2007), online word of mouth is much more powerful than offline word of mouth because it affects many people over a short period of time.

## 6.5 Summary

This Chapter employed Pearson's correlation to examine whether a relationship existed between online trust and online security issues. A moderate association between these two factors was found.

The results indicate a positive relationship between trusting belief and trusting behaviour across China, Taiwan and Hong Kong. Thus when the virtual members trust the virtual community, they are willing to revisit more frequently and recommend the community to their social groups. In other words, the members tend to increase the scope and depth of the relationship with the community. Thus online vendors who are seeking sustained business expansion and growth should devote significant resources to consumer trust development.

The outcome of culture impact is consistent with the viewpoints of Doney et al. (1998) and Gefen et al. (2005). While this study does not find significant difference in trust development across China, Taiwan and Hong Kong, the result suggests that respondents from China, Taiwan and Hong Kong show significant differences in trust tendency and privacy policy. Based on the results, respondents from Mainland of China show higher trust tendency than Hong Kong respondents. Further, respondents of Taiwan place more attention to privacy policy than China and Hong Kong respondents. In addition, when trust is developed, both China and Taiwan respondents revealed higher level of willingness to participate and recommend the community to other social groups than Hong Kong respondents did.

The results indicate that China, Taiwan and Hong Kong are three culturally different societies. China, Taiwan and Hong Kong respondents revealed cultural differences in individualism, uncertainty avoidance and long term orientation. Taiwan respondents show stronger characteristics in individualism and uncertainty avoidance compared with China and Hong Kong respondents. Taiwan and China respondents show higher degrees of long-term orientation compared with Hong Kong respondents. These results caution both the researchers and practitioners against aggregate view of China, Taiwan and Hong Kong as three homogeneous societies. The next chapter will conclude this thesis.

## **CHAPTER 7**

### **CONCLUSIONS, LIMITATIONS AND FURTHER RESEARCH**

#### **7.1 Introduction**

This study has empirically investigated the different factors that could influence consumer behaviour to adopt e-commerce in Great China Region. This Chapter reviews the findings presented in Chapter 5 and 6 with respect to research scope and research questions stated in Chapter 1. The aim of this chapter is to summarise the important findings and address the limitations and contribution of this study, provide new directions for future study. The chapter begins with a discussion of how the study achieves the research objectives in section 7.2. Section 7.3 provides a summary of prominent findings of the study. Section 7.4 acknowledges the study limitations. The contribution and area for future research are identified in section 7.5.

## **7.2 Fulfilment of Research Objectives**

Although the e-commerce has become a common medium for shopping, many shoppers still hesitate to make online purchases. Up to 78 per cent of online shoppers abandon their shopping carts (Goldwyn, 2003; Kim et al., 2008) due to uncertainty about the consequences of the purchase. According to previous studies, online shopping is more risky than traditional shopping due to the lack of opportunity to physically examine the product and the lack of personal contact (Goldsmith and Goldsmith, 2002; Phau and Poon, 2000; Kim et al., 2008; Lian and Lin, 2008).

Building online trust is an essential component for vendors to succeed in an e-commerce environment – where transactions are more impersonal and anonymous – as this affects consumers' purchase intentions. In e-commerce, shoppers cannot directly experience goods (with a few digital exceptions), and they make purchase decisions based on the information provided by online vendors as well as from their perceptions of web sites. Based on a detailed literature review (Davis, 1989; Teo and Liu, 2007), this research model 'Technology Acceptance Model' (TAM) was created and then tested in the context of online general vendors in Great China Regions. The TAM proposed by Davis (1989) and Davis et al. (1989) has been widely used in explaining the adoption of information technologies (IT) and usage. TAM predicts user acceptance of any technology to be determined by two factors: perceived usefulness and perceived ease of use. TAM, derived from the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980), posits that user perceptions of usefulness and ease of use determine behavioural intention towards using the system.

Chapter one presented the general research background to the study and highlighted

the aim of this study: to isolate and identify issues and factors important to the development of e-commerce that may be influenced by cultural difference. This chapter also presented the research motivation and brief research method.

As stated in Chapter one, the research objectives are to answer the following questions:

- 1. Do Chinese cultures share the same trust or have identical consumer behaviour to e-commerce?**
- 2. What is the relationship and impact of cultural to consumer behaviour in e-commerce?**
  - Dose culture influence directly affects consumer's online trust?
  - Is there a culture influence in the effect of online security issue?
- 3. To what extent have major cultural factors influenced consumers' trust towards e-commerce in Chinese society?**
- 4. What are the similarities and differences in security and trust issue about e-commerce that may be influenced by Chinese culture in different regions?**
  - Do Chinese consumers in different regions have same attitudes towards online trust?
  - Do Chinese consumers in different regions have same views on online security?



## **5. What is the relationship between trust issue and security issue in e-commerce?**

A detailed discussion of e-commerce development in Great China Region was presented in Chapter two. This Chapter started with a discussion of e-commerce development in Mainland China, followed by a discussion of e-commerce development in Taiwan and Hong Kong. The Chinese Internet users became increasing aware of the importance of e-commerce since the late 1990s. It was found that a conflict between Internet security and Internet user growth resulted in e-commerce development finding difficult to obtain effective support from local governments. These findings indicate that the effectiveness of e-commerce implementation in Mainland China depends on the reform of legal regulation and influenced by government control.

Chapter three began with the introduction of theoretical background for e-commerce, such B2B, B2C and C2C perspective. Chapter three also provided theoretical background for various factors that could influence the development of e-commerce. Main factors include security issues, online trust and cultural influence. This chapter further discussed Chinese cultural influence and other issues affecting the development of e-commerce.

The choice of research methods for this study depends on several factors, such as the research objectives, research questions, available research resources, and time and cost of the research. Chapter four discussed research methods employed in this study. The online questionnaire as a quantitative method had been conducted for this

research. The pilot test study was also adopted in this study to improve the trustworthiness and quality of the questionnaire. The survey was conducted in three stages - pilot study testing, preparation for the main data collection and final Internet questionnaire survey. The questionnaire adopted five-point Likert scale and was published in four different discussion forums and online shops in China, Taiwan and Hong Kong. 649 of 692 Internet users answered questionnaire completely, equivalent to questionnaire usable rate of 93.8 per cent. Only 43 returned questionnaires could not be used for analysis for the reason such as inappropriate complete.

Chapter five presented the data analysis of online questionnaire by using descriptive statistics to discover respondents' understanding of e-commerce. More than 50 per cent of respondents indicated they were concern about online security issues, and only 27 per cent of respondents agreed it is safe to credit card online. Main findings were as follow:

- From respondents' views, it is important to disclose whether online vendor is trustworthy, such as providing correct product information, achieving customer expectation, and keeping their promise and commitment. This finding was also confirmed by Gefen's (2000) study. The finding also indicates that there is no significant difference between Mainland China, Taiwan and Hong Kong.
- The online security factor was viewed as of high importance, and this finding is consistent with several studies (e.g., Hoffman *et al.*, 1999; Pavlou, 2003). This finding may suggest that e-commerce development in G.C.R. is dependent on the online vendors to provide safe transaction and multiple third party certifications.

- It was found that the cultural impact can influence Internet user's decision to use e-commerce. 50 per cent of all respondents would take advice from friends, family and virtual community member. This result supports Tan (1999) and Chen *et al* (2008) studies. There is no significant difference between these three regions.
- Concerning the perception of risk issues, respondents thought e-commerce involved more financial and product risk than traditional way of shopping.

Analysis by using different factors and their influence to analyse respondents' responses to each question was undertaken in Chapter six. This is to discover whether culture differences in Mainland China, Taiwan and Hong Kong have an impact to each question. Multiple regression analysis was employed to examine any relationship existed between four different factors and purchase intention. Findings are summarised below:

- There was a positive relationship between cultural influence and consumer attitude. In other words, cultural influence has fairly impacted on e-commerce through consumer attitude. This result consists with Peng's (2007) study, who reported that there were fairly cultural differences in consumer attitude between Taiwan and Hong Kong.
- Regarding the online security issues in Great China Region, from respondents results, it is difficult for Chinese Internet users to fully trust online vendors unless relevant or multi third party certification is presented. Furthermore, there was a positive relationship between security and attitude towards online

shopping, supporting previous studies (e.g., Vijayasathy, 2004; O’Cass and Fenech, 2003).

- It was found that culture issues had indirectly impacted on e-commerce through online trust, confirmed by Venkatesh and Morris’s (2000) study, which revealed the culture influence can be significant in different aspects.
- Risk perception only had slightly impacted on e-commerce through online trust ( $p=0.271$ , usually considered as not significant). There was a positive relationship between risk perception and online trust. Jarvenpaa et al. (2000) found that there was an indirect effect of trust on purchase intention through risk perception. This result supports the findings of the studies by Vijayasathy and Jones (2002) and Cunningham et al. (2005).

As regards the relationship between online trust and online security issues by using Pearson’s correlation analysis, a significant result was found ( $\text{Sig}=0.000$ ). There is a significant relationship between online trust and security issues. In other words, high levels of security control were more likely to increase online trust for customers which create more confidence to use e-commerce. This result confirms the previous studies by Koufaris and Hampton-Sosa (2004).

### **7.3 Summary of Prominent Findings**

To summarise, in the emerging stage of e-commerce development in Great China Region, it is difficult for all types of Internet users to do online shopping immediately as most of them still concern about security issues. The results indicated that most of the respondents were still using e-commerce or trying to use e-commerce, and they were willing to undertake some risks for it. This suggests Chinese Internet users tend to make a proactive effort to adopt e-commerce. Online trust and security issues will play an essential role in influencing customer behaviour and encouraging other Internet users to use e-commerce. China, Taiwan and Hong Kong are three culturally similar societies with diverse characteristics, in the aspects of online trust, security issues, cultural influence and risk perception, similar results were obtained across three regions.

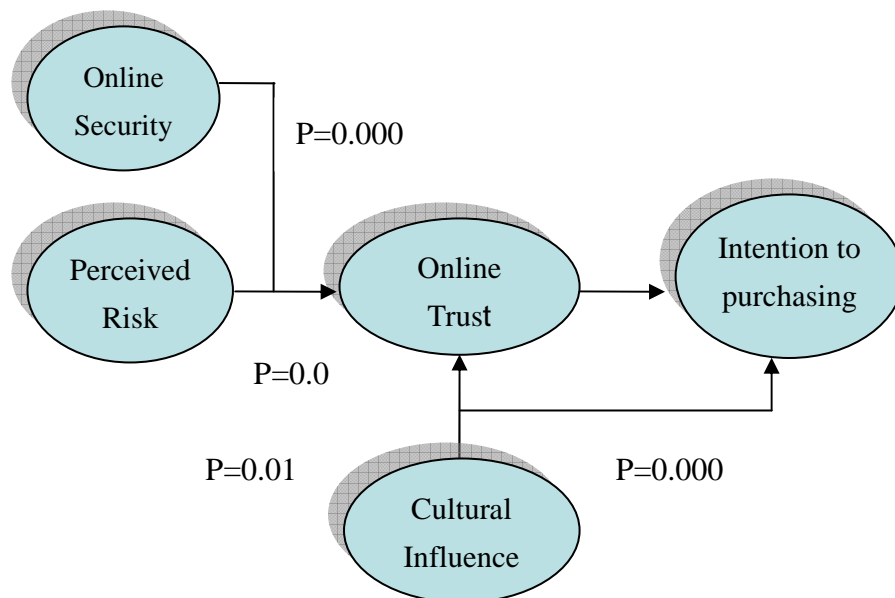
As well as fulfilling the main objectives of the study, there are some important and prominent findings from the research, there are summarised as follow:

Consistent with the proposed research model, the results suggest that security issues, and online trust had small effects on risk perception. Among these effects, online trust had the largest effect followed by security issues. Furthermore, risk perception and online trust had effects on attitude, which is the purchase intention. The effect of online trust was larger than the effect of risk perception on purchase intention. Similarly, cultural influence had a positive and direct effect on purchase intention to take part in e-commerce. However, the effect of risk perception was not found to be significant on intention. The reason for this may be that risk perception only aids in forming attitude of consumers rather than their intentions. Even though the risk

perception is high, consumers may decide to take part in e-commerce. Consumers would also consider the online trust they may have towards online vendors and make their purchasing decision. In addition to risk perception, online trust plays a significant role in shaping the attitude of consumers. The finding of the insignificant relationship between risk perception and intention which support the fact that attitude fully mediates the relationship between risk perception and purchase intention.

The results of this study provide evidence that culture have effect on online trust factors in e-commerce, which is consistent with Gefen and Heart's (2006) study. The findings of this study are also consistent with the results of Tan and Sutherland's (2004) study.

Figure 7.1 Research Model with Results



The answers to these questions in simple terms are:

- 1. Chinese cultures share the similar online trust or have identical consumer behaviour to e-commerce although there are minor differences.**
  
- 2. In terms of relationship and impact of cultural to consumer behaviour in e-commerce, the answer are:**
  - Culture does influence affects consumer's online trust indirectly but the relationship between these two factors is not very significant.
  
  - There is fairly culture impact in the effect of online security issue.
  
- 3. Advices from friends and members of the virtual community have played major cultural factors to influence consumers' trust towards e-commerce in Chinese society.**
  
- 4. As regards to the similarities and differences in security and trust issue about e-commerce that may be influenced by Chinese culture in different regions, the answer are:**
  - Both China and Taiwan Internet users revealed higher level of willingness to participate and recommend the community to other social groups. This suggests a positive relationship between trusting belief and trusting behaviour across China, Taiwan and Hong Kong.

- The study indicates that Internet users from Mainland of China show higher trust tendency than Hong Kong respondents. As a result, Internet users from Taiwan were more concern to security issues than China and Hong Kong Internet users.
- As indicated in the discussion in Chapter 6, section 6.44, there are some differences in attitudes towards online trust and views on online security in different regions. However, these differences are not significant when one compares those regions sharing homogeneous culture background.

**5. There is a significant positive relationship between online trust and security issues.**

The contribution of this study and potential future research areas will be discussed in the latter section 7.5.



#### **7.4 Limitation of the Study**

There were several limitations in this study. First, due to time and funding limitations, it was difficult to obtain a large sample group. Due to the availability of the data, not every single region in China was included in this study. In addition, only the adoption and usage of the internet was investigated.

Another limitation is the method employed to collect data. The online questionnaire survey has an inherent problem, which are the response errors. These can arise when the respondent has misunderstood the question, or when the respondent has not expressed himself truly. Furthermore, only a covering letter as an incentive to motivate people to complete the questionnaire, this may result in the poor quality of answers as there were only written instructions to help respondents complete the questionnaire (McCullough, 1998).

One potential limitation is the student sample represented the major group, which is unlikely to represent the wider population. This study does not compare tangible versus intangible products or services in the analysis. Future research can develop more detailed models that can capture and explain the differences across product categories or focus on one category, such as books, CDs or airline tickets. Furthermore, the relationship between customer satisfaction, brand loyalty and continuous shopping intention in the Chinese online shopping environment should be scrutinised. Further research can examine other factors (web site content and quality, consumer loyalty) and different types of transaction within other e-commerce market (B2B, C2C).

Previous research suggests that Mainland China is a heterogeneous market (e.g. Cui and Liu, 2000; Lu et al., 2005). This study does not contain significant differences across the country, such as urban versus rural, coast cities versus inland cities, eastern versus western regions, southern versus northern areas. Future studies can be conducted in other Asian countries to determine the generalisability of the study.

Despite these limitations, the results from this study are important and revealing. The interrelationships among factors that influence the development of e-commerce are crucial for online vendors to understand in regard to online trading strategy development and implementation.

The study not only shows culture's significant impact on the adoption of the e-commerce, but also sheds light on how online vendors who want to capitalise on the unique capabilities of the e-commerce can use these insights to guide their initial market entry, investment and marketing strategy decisions.

## **7.5 Contribution and Future research**

It has been argued that cultural influence has impact on e-commerce development and may vary between countries (Jarvenpaa and Tractinsky, 1999; Teo and Liu, 2007). There are numerous studies of cultural influence reporting in developed countries, such as the US, Japan, Korea and Western Europe, even international comparative studies of differences between cultural influence have focused on these countries only (Chai and Pavlou, 2002; Teo and Liu, 2007). However, the development of Internet in these countries does not appropriately reflect the trend of e-commerce in developing countries and it therefore cannot be directly applied to developing countries. While few studies explore the online trust, security issues and cultural influence in e-commerce, they provide limited information regards to cross regional studies. This study fills this gap by extending the literature in developing countries to the specific Great China Region.

This study contributes to the understanding of cultural influence to e-commerce from different perspectives. One of the main contributions is that a set of relationships between several important factors that tend to be associated with purchase intentions in e-commerce was specified, justified, and empirically validated. Another contribution of this research is the placement of fundamentally important factors – online trust, security issues, cultural influence and risk perception as determinants of e-commerce development, drawing from a well-established model of social science framework. Most importantly was the comparison between Great China Region in cultural influence aspect, which showed significant moderation in the proposed research model, reflecting the similarity of purchase intention in three Chinese regions. This advance in theoretical development provides additional evidence

regarding the impact of culture on online trust and security issues. In particular, the findings provide cross region research to the extent that cultural influence should be considered as a continuous process and that the change in political and social conditions can fundamentally change cultural values. Therefore, it is important to understand the cultural change for these regions sharing similar cultural backgrounds.

Another contribution of this study was developing an integrative framework of e-commerce to investigate the major factors on cultural that significantly impact the formation of online trust. The model includes cultural factors, security issues, risk perception and online trust. This study also highlighted the distinction of constructs of security issues and showed their differential effects on other related constructs in the research model.

At the implication of the research, this study indicated that it is important to provide consumer with correct and useful information of product/services from online vendors. Online vendors should pay more attention to social influence on consumer behaviour, such as word-of-mouth. There is an evidence to suggest that advices from friends and members of the virtual community have played major cultural factors to influence consumers' trust towards e-commerce in Chinese society. According Lo (1997), Chinese are sensitive to maintenance of society, such as families and organisation. Online vendors should endeavor to enrich the web site content and communication tools to enhance the customers' online trust. In order to enhance social interaction, online vendors may ultimately evoke personal recommendations to current and potential online customers. Understanding this issue is important because it provides guidelines for practitioners who plan to set up cross-regional website for business purposes. Online vendors who plan to conduct business in these three

regions should develop different business strategies.

The research suggests that online vendors should build web sites that are not only useful, secure, and respect privacy, but that are also trustworthy. Online vendors can exploit useful techniques or informative content on their web sites to enhance consumers' confidence and reduce consumers' utilisation concerns. Higher perceptions of privacy and security are associated with a promise of safeguards for personal information. Web site competency is also an important factor: a good reputation is regarded as a sign of a good and candid company with superior capabilities; willingness to customise is considered as an indication of company's benevolence and consideration of consumers. Different levels of trust propensity moderate the relationships between consumers' online initial trust and their perceptions of a web site. Higher degrees of online trust and familiarity with online purchasing stimulate higher degrees of consumers' purchase intentions; familiarity with online purchasing reduces consumers' perceived risks, brings positive attitudes in purchase intentions, and eases purchase decisions.

The result of the study also indicated that Chinese Internet users were more risk seeking. Therefore, to reduce the risk perception, the presentation of multiple security certificates in web site is very important to online vendors and customers, which reduce the concern of security issue and increase purchase intention for customer. Mainland China, Taiwan and Hong Kong are three important Asia markets with diverse features of close geographical locations and homogeneous culture backgrounds. Accordingly, different business strategies need to be undertaken to increase the online trust and security issues in each regions. For example, the security issues elements may need to be emphasised in the high uncertainty avoidance regions.

The future research could employ a much larger questionnaire sample. In particular, the Asian region seems to have some common characteristics, such as custom and corporate culture. This comparative study would be worthwhile to investigate and extremely useful for the contribution to the international experience of e-commerce.

Future research could collect a broader, more controlled sample and use a greater variety of products. Prospective research could also investigate elements influencing consumers' subsequent purchase behaviours, such as product quality, delivery methods, and after-sales service. Further, research may also examine other possible determinants affecting online initial trust, such as marketing tactics, product varieties, price ranges, online service, web site quality, and levels of convenience (time savings and/or the speed of transaction processes).

This study has also demonstrated several areas where future research could be undertaken. A useful starting point for future research would be to including the other different factors influence, such as consumer loyalty, product perception, web site quality and size, etc (Ranganathan and Ganapathy, 2002; Park and Kim, 2003; Elliott and Speck, 2005). This could lead to a broader understanding of e-commerce adoption influence by different factors. Future research could examine different type of online vendor currently undertaking e-commerce in Great China Region (China, Taiwan and Hong Kong). and use content analysis to investigate which factors drive them to adopt e-commerce and why.

Overall, the study has achieved its objectives and made some primary contributions to the literature in the area of e-commerce development and adoption.

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## APPENDIX I

Copy of Pilot Questionnaire

Copy of Pilot Questionnaire Traditional Chinese Version

## Questionnaire

This questionnaire is part of my PhD research at Napier University. The research project is investigating the cultural influence on consumers' trust in electronic commerce. I am requesting your voluntary participation in this study. This study asks for your reaction to electronic commerce and your experience with purchasing online.

All responses to this questionnaire are for research purposes only, and will be kept confidential. Your anonymity will also be assured. The questionnaire should take no more than 12 minutes to complete. When answering the following questions please feel free to add any additional information that you think may be of interest to my research. There is an additional section at the end of the questionnaire for you to do so.

If you feel unable for whatever reason to complete a section please just move onto the next question. Also, if you have any questions regarding this project, please do not hesitate to contact David Wu by email: [da.wu@napier.ac.uk](mailto:da.wu@napier.ac.uk)

Many thanks for your time and contribution!

Please answer all questions by circling/**bold** the select answer.

**User profile-** please tells us something about yourself.

Please be assured that the information provided is confidential and will be used only in aggregated form.

### C1. Age

- a) Less than 18 years
- b) 19 to 30 years
- c) 31 to 40 years
- d) 41 to 50 years
- e) 51 to 60 years
- f) More than 61 years of age



C2. Are you a male or female?

- a) Male
- b) Female

C3. What is your current occupation?

- a) Student
- c) Employee
- b) Employer
- c) Unemployed
- d) Retired

C4. What is the highest level of education you have achieved?

- a) Lower than high school
- b) High school
- c) Vocation/ Technical school (2 year)
- d) Degree/ undergraduate(4 year)
- e) Master/ postgraduate
- f) PhD/ DBA
- g) Others

C5. Where do you live ordinarily?

- a) Mainland China
- b) Taiwan
- c) Hong Kong
- d) Other

C6. How long have you been using the Internet?

- a) Less than 3 years
- b) 3 ~ 5 years
- c) 5 ~ 7 years
- d) More than 7 years

C7. How many hours per day on average do you use of the Internet?

- a) Less than one hour
- b) 1 ~ 3 hours
- c) 3 ~ 5 hours
- d) 6 ~ 10 hours
- e) Above 10 hours

C8. Where do you mostly get access to the Internet from?

- a) Home
- b) School, college or university
- c) Work place
- d) Public building (e.g. library)
- e) Commercial service (e.g. Internet café)

## **Purchase Attitude**

P1. How many times did you previously purchase products or services over the Internet in the last year?

- a) Never
- b) Once
- c) 2-5 times
- d) 6-10 times
- e) More than 10 times

P2. When was the first time you purchased over the Internet?

- a) Within this week
- b) Within this month
- c) Within this year
- d) 1- 3 year ago
- e) More than 3 years ago
- f) Never

P3. When was the last time you purchased over the Internet?

- a) This week
- b) This month
- c) Within this year
- d) More than 1 year ago
- e) Never

P4. Do you use Internet Banking?

- a) Yes
- b) No

Please give your opinions by circling/**bold** the number that expresses the extent of your agreement or disagreement with each statement below.

Each statement is accompanied by a 5-point scale where “1 = strongly disagree” and “5 = strongly agree”.

### Online Trust

We would like to know your opinions about online trust

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have faith in humanity	1	2	3	4	5
More than 50 per cent of online vendors provide correct information about the items that I want to purchase	1	2	3	4	5
More than 50 per cent of online vendors provide useful and sufficient information	1	2	3	4	5
More than 50 per cent of online vendors keep promises and commitments	1	2	3	4	5
More than 50 per cent of online vendors' services meet my expectations	1	2	3	4	5

## Online Security

We would like to know your perception of online security

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
More than 50 per cent of online vendors implement security measures to protect internet shoppers	1	2	3	4	5
More than 50 per cent of online vendors usually ensure that transactional information is protected from accidentally being altered or destroyed during a transmission	1	2	3	4	5
More than 50 per cent of online vendors provide sufficient information when I try to make a transaction	1	2	3	4	5
I feel safe to use my credit card to purchase online in most cases	1	2	3	4	5
It is important to me that the online vendor has multiple third party certifications	1	2	3	4	5

### Culture Influence

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would take my friend's / family's advice whether I should purchase online	1	2	3	4	5
I would take advice from members of the virtual community whether I should online purchasing	1	2	3	4	5
It is important to me that a person/ friend recommends a website to me before I purchase online	1	2	3	4	5
For goods, checking the physical condition of the products is necessary before I purchase online	1	2	3	4	5

### **Intention to Purchasing**

We would like to know about your Internet shopping decision and your willingness to buy

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I can save money by online purchase	1	2	3	4	5
I can save time by online purchase	1	2	3	4	5
Online purchase increases my productivity in shopping (e.g. make purchase decisions or find product information within the shortest time frame)	1	2	3	4	5
I am likely to purchase online within a month.	1	2	3	4	5
I intend to continue purchasing online rather than use other alternative (local shop)	1	2	3	4	5

### Perceived Risk

We would like to know your perception of risk

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Purchasing from Internet would involve more product risk (i.e. defective product) when comparing with traditional ways of shopping	1	2	3	4	5
Purchasing from Internet would involve more financial risk (i.e. fraud, hard to return) comparing with traditional ways of shopping	1	2	3	4	5



Please give your opinions by circling/**bold** the number that expresses the extent of your choice with each statement below.

How well does the online vendor fit your personal requirements/ needs (1- absolutely low, 5- significantly high)	1	2	3	4	5
What is the likelihood of getting a good bargain by purchase online (1- very unlikely, 5- very likely)	1	2	3	4	5
How much risk would you tolerate when deciding to make a purchase online (1- absolutely no risk, 5- significant risk)	1	2	3	4	5

## **Outcomes**

O1. How satisfied are you with using the Internet for the purchase of last time?

- a) very satisfied
- b) satisfied
- c) neither
- d) dissatisfied
- e) very dissatisfied

O2. Would you purchase similar products or services from Internet in future?

- a) definitely yes
- b) possibly
- c) probably not
- d) definitely not

O3. Would you recommend purchase the same product/service via Internet to a friend?

- a) definitely
- b) possibly
- c) probably not
- d) definitely not

O4. How long was it taking to make a purchase from Internet on average?

- a) Less than 10 minutes
- b) 11~30 minutes
- c) 31~45 minutes
- d) 46~60 minutes
- e) More than 1 hour

O5. What is the main reason you would make a purchase online?

- a) Convenience (easy to use)
- b) Time saving
- c) Bargain price
- d) Secure transaction
- e) Range of products/ availability of products
- f) Other. Please specify: \_\_\_\_\_

O6. Would you like to be contacted for further research?

- a) Yes, please leave your email here: \_\_\_\_\_
- b) No

**Thank you very much for taking the time to support this research.**

Please leave your comments and suggestion here:

這是一份學術問卷研究，目的在於了解網絡購物過程中文化對於信任的影響，無論您是否有過網絡購物的經歷，煩請您撥空協助本問卷的回答，您的寶貴意見將使本研究更有學術價值。

本問卷僅供學術研究之用，您個人的資料及意見絕對保密，不會單獨對外公開，請安心作答。問卷有五個部份的問題，請您耐心填答，務必完成整份問卷，切勿遺漏，您的熱心參與，將有助於本研究的順利完成，在此向您致上由衷的感謝！如有疑問，請聯絡該電子信箱: [da.wu@napier.ac.uk](mailto:da.wu@napier.ac.uk)

請用圈選或**改色**或**粗體**或是 **highlight** 作答。

## 個人資料

### C1. 年齡

- a) 未滿 18 歲
- b) 19 ~ 30 歲
- c) 31 ~ 40 歲
- d) 41 ~ 50 歲
- e) 51 ~ 60 歲
- f) 61 歲以上

### C2. 您的性別是?

- a) 男性
- b) 女性

### C3. 請問您的現在就職情況?

- a) 學生
- b) 僱員
- c) 僱主
- d) 待業中
- e) 退休

C4. 請問您的教育程度是?

- a) 國中/初中 (含以下)
- b) 高中
- c) 高職/專科學校
- d) 大學
- e) 碩士
- f) 博士
- g) 其它

C5. 通常居住地點?

- a) 中國大陸
- b) 台灣
- c) 香港
- d) 其它

C6. 請問您迄今接觸網絡的時間是?

- a) 少於 3 年
- b) 3 ~ 5 年
- c) 5 ~ 7 年
- d) 7 年以上

C7. 您平均每天上網的時數?

- a) 少於一小時
- b) 1 ~ 3 小時
- c) 3 ~ 5 小時
- d) 6 ~ 10 小時
- e) 10 小時以上

C8. 您通常上網的地點是?

- a) 家中
- b) 學校/宿舍
- c) 工作場所
- d) 公共地區 (如. 圖書館)
- e) 商業場所 (如. 網咖/網吧)

## 購買行爲

P1. 請問在最近一年中，您的網絡購物次數大約爲幾次？

- a) 一次
- b) 2-5 次
- c) 6-10 次
- d) 10 次以上
- e) 未曾使用過網絡購物

P2. 請問您第一次的使用網絡購物的時間是？

- a) 一星期前
- b) 一個月前
- c) 一年前
- d) 1- 3 年前
- e) 超過 3 年
- f) 未曾使用過網絡購物

P3. 請問您最近一次的使用網絡購物的時間是？

- a) 一星期內
- b) 一個月以內
- c) 一年內
- d) 超過一年
- e) 未曾使用過網絡購物

P4. 請問您有使用網絡銀行嗎？

- a) 有
- b) 沒有



請仔細閱讀下列語句，根據語句敘述的情況與您本身觀念或行為相符程度，依照：1 非常不同意，2 不同意，3 普通，4 同意，5 非常同意。

請在適當的方格之中用圈選或是**粗體**或是 **highlight** 作答。

### 網絡信用

我們想了解您對網絡信用的感想。

	非常不同意	不同意	普通	同意	非常同意
我相信人性是善良的。	1	2	3	4	5
五成以上的網絡賣家會提供完整的產品規格并配有實物圖片。	1	2	3	4	5
超過五成的網絡賣家會提供清楚且具體的產品功能及使用方法。	1	2	3	4	5
超過五成的網絡賣家會承諾某項服務時，會確實遵守。	1	2	3	4	5
超過五成的網絡賣家能了解買家的個別需求，并提供個人化服務或產品。	1	2	3	4	5

## 線上交易的安全性

我們想了解您對線上安全的看法。

	非常不同意	不同意	普通	同意	非常同意
超過五成的網絡賣家提供交易的安全機製以保護買家。	1	2	3	4	5
超過五成的網絡賣家通常會確保交易的資料不會突然在交易過程中損毀。	1	2	3	4	5
在交易過程中，超過五成的網絡賣家會提供正確和詳細的交易訊息。	1	2	3	4	5
我會放心在網絡上使用信用卡/金融卡購物，因為我覺得線上交易是安全的。	1	2	3	4	5
對我來說，網絡賣家有複數的交易安全認證是很重要的。	1	2	3	4	5

## 文化影響

	非常不同意	不同意	普通	同意	非常同意
對於是否該使用網絡來購物，我會先參考家人或朋友的建議。	1	2	3	4	5
對於是否該使用網絡購物，我會參考虛擬社群成員(如，網友或板友)的建議。	1	2	3	4	5
在網絡上購物前，經過朋友或家人推薦的購物網站是很重要的。	1	2	3	4	5
對我來說，在網絡上購物前，檢測實體產品的情況是必須的。	1	2	3	4	5

## 購買意願

我們希望能了解您對網絡購物的意願。

	非常不同意	不同意	普通	同意	非常同意
利用網絡購物能讓我節省金錢。	1	2	3	4	5
利用網絡購物能讓我節省時間。	1	2	3	4	5
網絡購物可以增加我的購物效率。(如. 降低比較商品的精力)	1	2	3	4	5
未來一個月內, 我很有可能會在網絡上購買商品.	1	2	3	4	5
我會繼續使用網絡購物的意願大於使用其它的管道(如, 實體商店)。	1	2	3	4	5

## 感知風險

我們希望能了解您對網絡購物風險的接受度。

	非常不同意	不同意	普通	同意	非常同意
相對於傳統的購物渠道，使用網絡購物會出現更多的產品風險 (如. 物非所值，缺陷商品)	1	2	3	4	5
相對於傳統的購物渠道，使用網絡購物會出現更多的財務損失(如. 詐騙，資料外洩 )	1	2	3	4	5

請仔細閱讀下列語句，根據語句敘述的情況與您本身觀念或行為相符程度，在適當的方格之中用圈選或是**粗體**或是 **highlight** 作答。

請問您覺得網絡賣家有達到您所要求的個別服務或展品嗎? (1- 完全沒有, 5- 完全能達成)	1	2	3	4	5
請問利用網絡購物會有多少機會可以拿到優惠的折扣。(1- 非常少有, 5- 時常都有)	1	2	3	4	5
請問您願意承受多大的風險下才會利用網絡來購物。 (1- 完全沒有風險, 5- 非常高的風險)	1	2	3	4	5

## 結果分析

O1. 請問您對最近一次網絡購物的滿意程度?

- a) 非常滿意
- b) 滿意
- c) 普通
- d) 不滿意
- e) 非常不滿意
- f) 並未使用網絡購物

O2. 請問您未來還會繼續利用網絡購買同類型的展品嗎?

- a) 一定會
- b) 可能會
- c) 應該不會
- d) 絕對不會

O3. 請問您會推薦親友利用網絡購買同類型的展品嗎?

- a) 一定會
- b) 應該會
- c) 應該不會
- d) 絕對不會

O4. 請問您在網絡購物過程中平均所花費的時間?

- a) 不超過 10 分鐘
- b) 11~30 分鐘
- c) 31~45 分鐘
- d) 46~60 分鐘
- e) 1 小時以上
- f) 並未使用網絡購物

O5. 請問您使用網絡購物的最主要的原因?

- a) 便利性
- b) 省時
- c) 價格折扣
- d) 安全的交易
- e) 展品的種類或選擇
- f) 其它. 請註明:\_\_\_\_\_

O6. 請問您願意參與本主題的深入研究調查嗎?

- a) 是的, 請留下您的 email: \_\_\_\_\_
- b) 不, 謝了

**本問卷到此結束, 感謝您的參與和協助這份研究調查.**

Please leave your comments and suggestion here:



## APPENDIX II

Copy of Final Questionnaire

Copy of Final Questionnaire Simplified Chinese Version

Copy of Final Questionnaire Traditional Chinese Version

Questionnaire  
30 May 2008

Dear Sir/Madam,

This questionnaire is part of my substantial research at Napier University, Edinburgh in UK. The research project is investigating the cultural influence on consumers' trust in electronic commerce. Your voluntary participation in this study is very much appreciated. This study asks for your reaction to electronic commerce and your experience with purchasing online.

All responses to this questionnaire are for research purposes only, and will be kept confidential. Your anonymity will also be assured. The questionnaire should take no more than 10 minutes to complete. When answering the following questions please feel free to add any additional information that you think may be of interest to the research. There is an additional section at the end of the questionnaire for you to do so.

If you feel unable for whatever reason to complete a section please just move onto the next question. Also, if you have any questions regarding this project, please do not hesitate to contact David Wu by email: [da.wu@napier.ac.uk](mailto:da.wu@napier.ac.uk)

Many thanks for your time and contribution!

Yours faithfully,

David Wu, Ph.D. Candidate  
School of Accounting & Economics  
Napier University Business School

## Purchase Attitude

Please answer all questions by circling/**bolding**/colouring/highlighting the select answer.

P1. How many times did you previously purchase products or services from Internet over the last year?

- a) Once
- b) 2-5 times
- c) 6-10 times
- d) More than 10 times
- e) Never

P2. When was the first time you purchased over the Internet?

- a) Within this week
- b) Within this month
- c) Within this year
- d) 1- 3 year ago
- e) More than 3 years ago
- f) Never

P3. When was the last time you purchased over the Internet?

- a) This week
- b) This month
- c) Within this year
- d) More than 1 year ago
- e) Never

P4. Do you use Internet Banking?

- a) Yes
- b) No

P5. What type of products or services have you purchased over the Internet last time?

(Choose One only)

- a) Digital products (CD, DVD, Video, software)
- b) Electronics (Audio and video system, PC hardware)
- c) Books
- d) Groceries
- e) Flowers
- f) Fashion and apparel
- g) Tickets (travel, cinema, etc.)
- h) Toys/ gifts pack
- i) Financial services (stock and shares, insurance, mortgage, banking)
- j) Not applicable
- k) Others, please specify:

Please give your opinions by circling/**bolding** the number that expresses the extent of your agreement or disagreement with each statement below.

Each statement is accompanied by a 5-point scale where “1 = strongly disagree” and “5 = strongly agree”.

### Online Trust

We would like to know your opinions about online trust

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have faith in humanity	1	2	3	4	5
More than 50 per cent of online vendors provide correct information about the items that I want to purchase	1	2	3	4	5
More than 50 per cent of online vendors provide useful and sufficient information	1	2	3	4	5
More than 50 per cent of online vendors keep promises and commitments	1	2	3	4	5
More than 50 per cent of online vendors' services meet my expectations	1	2	3	4	5

## Online Security

We would like to know your perception of online security

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
More than 50 per cent of online vendors implement security measures to protect Internet shoppers	1	2	3	4	5
More than 50 per cent of online vendors usually ensure that transactional information is protected from accidentally being altered or destroyed during a transmission	1	2	3	4	5
More than 50 per cent of online vendors provide sufficient information when I try to make a transaction	1	2	3	4	5
I feel safe to use my credit card to purchase online in most cases	1	2	3	4	5
It is important to me that the online vendor has multiple third party certifications	1	2	3	4	5

### Culture Influence

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would take my friend's / family's advice whether I should purchase online	1	2	3	4	5
I would take advice from members of the virtual community whether I should online purchasing	1	2	3	4	5
It is important to me that a person/ friend recommends a website to me before I purchase online	1	2	3	4	5
For goods, checking the physical condition of similar products is necessary before I purchase online	1	2	3	4	5

### **Intention to Purchasing**

We would like to know about your Internet shopping decision and your willingness to buy

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I can save money by online purchase	1	2	3	4	5
I can save time by online purchase	1	2	3	4	5
Online purchase increases my productivity in shopping (e.g. make purchase decisions or find product information within the shortest time frame)	1	2	3	4	5
I am likely to purchase online within a month	1	2	3	4	5
I intend to continue purchasing online rather than use other alternative (local shop)	1	2	3	4	5



### Perceived Risk

We would like to know your perception of risk

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Purchasing from Internet would involve more product risk (i.e. defective product) when comparing with traditional ways of shopping	1	2	3	4	5
Purchasing from Internet would involve more financial risk (i.e. fraud, hard to return) comparing with traditional ways of shopping	1	2	3	4	5

Please give your opinions by circling/**bolding** the number that expresses the extent of your choice with each statement below.

Statements	Absolutely Low	Low	Uncertain	High	Significantly High
How well does the online vendor fit your personal requirements/needs	1	2	3	4	5

Statements	Very Unlikely	Unlikely	Uncertain	Possibly	Very Likely
What is the likelihood of getting a good bargain by purchase online	1	2	3	4	5

Statements	Absolutely No Risk	Low Risk	Uncertain	Medium Risk	Significant Risk
How much risk would you tolerate when deciding to make a purchase online	1	2	3	4	5

## **Outcomes**

O1. How satisfied are you with using the Internet for the purchase of last time?

- a) Very satisfied
- b) Satisfied
- c) Neither
- d) Dissatisfied
- e) Very dissatisfied
- f) Not applicable

O2. Would you purchase similar products or services from Internet in future?

- a) Definitely yes
- b) Possibly
- c) Probably not
- d) Definitely not

O3. Would you recommend purchase the same product/service via Internet to a friend?

- a) Definitely
- b) Possibly
- c) Probably not
- d) Definitely not

O4. How long was it taking to make a purchase from Internet on average?

- a) Less than 10 minutes
- b) 11~30 minutes
- c) 31~45 minutes
- d) 46~60 minutes
- e) More than 1 hour
- f) Not applicable

O5. What is the main reason you would make a purchase online?

- a) Convenience (easy to use)
- b) Time saving
- c) Bargain price
- d) Secure transaction
- e) Range of products/ availability of products
- f) Other. Please specify: \_\_\_\_\_

**User profile-** please tells us something about yourself.

Please be assured that the information provided is confidential and will be used only in aggregated form.

C1. Age

- a) Less than 18 years
- b) 19 to 30 years
- c) 31 to 40 years
- d) 41 to 50 years
- e) 51 to 60 years
- f) More than 61 years of age

C2. Gender

- a) Male
- b) Female

C3. What is your major occupation currently?

- a) Executive/Managerial
- b) Professional (Doctor, Lawyer etc)
- c) Academic/Educator
- d) Computer Technical/Engineering
- e) Service/Customer Support
- f) Clerical/Administrative
- g) Sales/Marketing
- h) Full- Time Student
- i) Self-employed/Own Company
- j) Unemployed, looking for job
- k) Retired
- l) Other

C4. What is the highest level of education you have achieved?

- a) Lower than high school
- b) High school
- c) Vocation/ Technical school (2 year)
- d) Degree/ undergraduate(4 year)
- e) Master/ postgraduate
- f) PhD/ DBA
- g) Others (professional qualification)

C5. Where do you live ordinarily?

- a) Mainland China
- b) Taiwan
- c) Hong Kong
- d) Other

C6. How long have you been using the Internet?

- a) Less than 3 years
- b) 3 ~ 5 years
- c) 5 ~ 7 years
- d) More than 7 years

C7. How many hours per day on average do you use of the Internet?

- a) Less than one hour
- b) 1 ~ 3 hours
- c) 3 ~ 5 hours
- d) 6 ~ 10 hours
- e) Above 10 hours

C8. Where do you mostly get access to the Internet from?

- a) Home
- b) School, college or university
- c) Work place
- d) Public building (e.g. library)
- e) Commercial service (e.g. Internet café)

C9. Would you like to be contacted for further research?

- a) Yes, please leave your email here: \_\_\_\_\_
- b) No

**Thank you very much for taking the time to support this research.**

亲爱的受访者您好:

这是一份学术问卷研究，目的在于了解网络购物过程中文化对于信任的影响，无论您是否有过网络购物的经历，烦请您拨空协助本问卷的回答，您的宝贵意见将使本研究更有学术价值。

本问卷仅供学术研究之用，您个人的资料及意见绝对保密，不会单独对外公开，请安心作答。问卷有五个部份的问题，请您耐心填答，务必完成整份问卷，切勿遗漏，您的热心参与，将有助于本研究的顺利完成，在此向您致上由衷的感谢！如有疑问，请联络该电子信箱：[da.wu@napier.ac.uk](mailto:da.wu@napier.ac.uk)

请用圈选或**改色**或**粗体**或是 **highlight** 作答。

## 购买行为

P1. 请问在最近一年中，您的网络购物次数大约为几次？

- a) 一次
- b) 2-5 次
- c) 6-10 次
- d) 10 次以上
- e) 未曾使用过网络购物

P2. 请问您第一次的使用网络购物的时间是？

- a) 一星期前
- b) 一个月前
- c) 一年前
- d) 1- 3 年前
- e) 超过 3 年
- f) 未曾使用过网络购物



P3. 请问您最近一次的使用网络购物的时间是?

- a) 一星期内
- b) 一个月以内
- c) 一年内
- d) 超过一年
- e) 未曾使用过网络购物

P4. 请问您有使用网络银行吗?

- a) 有
- b) 没有

P5. 请问您最近一次使用网络购买的商品或服务是? (单选)

- a) 数字商品 (CD, DVD, 影音, 软件)
- b) 电子电器用品 (影音设备, PC 硬件)
- c) 书籍杂志
- d) 首饰配件
- e) 鲜花
- f) 服装鞋类
- g) 在线订票 (旅游, 戏剧等.)
- h) 玩具礼品
- i) 金融理财 (股票, 保险等 )
- j) 未曾使用过网络购物
- k) 其它, 请注明:

请仔细阅读下列语句，根据语句叙述的情况与您本身观念或行为相符程度，依照：1 非常不同意，2 不同意，3 一般，4 同意，5 非常同意。

请在适当的方格之中用圈选或是**粗体**或是 **highlighting** 作答。

### 网络信用

我们想了解您对网络信用的感想。

	非常不同意	不同意	一般	同意	非常同意
我相信人性是善良的。	1	2	3	4	5
五成以上的网络卖家会提供完整的产品规格并配有实物图片。	1	2	3	4	5
超过五成的网络卖家会提供清楚且具体的产品功能及使用方法。	1	2	3	4	5
超过五成的网络卖家会承诺某项服务时会确实遵守。	1	2	3	4	5
超过五成的网络卖家能了解买家的个别需求，并提供个性化服务或产品。	1	2	3	4	5

## 在线交易的安全性

我们想了解您对在线安全的看法。

	非常不同意	不同意	一般	同意	非常同意
超过五成的网络卖家提供交易的安全机制以保护买家。	1	2	3	4	5
超过五成的网络卖家通常会确保交易的数据不会突然在交易过程中损毁。	1	2	3	4	5
在交易过程中，超过五成的网络卖家会提供正确和详细的交易讯息。	1	2	3	4	5
我会放心在网络上使用信用卡/金融卡购物，因为我觉得在线交易是安全的。	1	2	3	4	5
对我来说，网络卖家有复数的交易安全认证是很重要的。	1	2	3	4	5

## 文化影响

	非常不同意	不同意	一般	同意	非常同意
对于是否该使用网络来购物，我会先参考家人或朋友的建议。	1	2	3	4	5
对于是否该使用网络购物，我会参考虚拟社群成员(如，网友或板友)的建议。	1	2	3	4	5
在网络上购物前，经过朋友或家人推荐的购物网站是很重要的。	1	2	3	4	5
对我来说，在网络上购物前，检测实体产品的情况是必须的。	1	2	3	4	5

## 购买意愿

我们希望能了解您对网络购物的意愿。

	非常不同意	不同意	一般	同意	非常同意
利用网络购物能让我节省金钱。	1	2	3	4	5
利用网络购物能让我节省时间。	1	2	3	4	5
网络购物可以增加我的购物效率。(如. 降低比较商品的精力)	1	2	3	4	5
未来一个月内，我很有可能会在网上购买商品。	1	2	3	4	5
我会继续使用网络购物的意愿大于使用其它的管道(如, 实体商店)。	1	2	3	4	5

## 感知风险

我们希望能了解您对网络购物风险的接受度。

	非常不同意	不同意	一般	同意	非常同意
相对于传统的购物渠道，使用网络购物会出现更多的产品风险 (如. 物非所值，缺陷商品)	1	2	3	4	5
相对于传统的购物渠道，使用网络购物会出现更多的财务损失(如. 诈骗，资料外泄 )	1	2	3	4	5

请仔细阅读下列语句，根据语句叙述的情况与您本身观念或行为相符程度，在适当的方格之中用圈选或是**粗体**或是 **highlighting** 作答。

	完全没有		不确定		完全能达成
请问您觉得网络卖家有达到您所要求的个别服务或展品吗？	1	2	3	4	5

	非常少有		不确定		时常都有
请问利用网络购物会有多少机会可以拿到优惠的折扣？	1	2	3	4	5

	完全 没有风 险		不确定		非常高 的风险
请问您愿意承受多大的风 险下才会利用网络来购物?	1	2	3	4	5

## 结果分析

O1. 请问您对最近一次网络购物的满意程度?

- a) 非常满意
- b) 满意
- c) 一般
- d) 不满意
- e) 非常不满意
- f) 未曾使用网络购物

O2. 请问您未来还会继续利用网络购买同类型的展品吗?

- a) 一定会
- b) 可能会
- c) 应该不会
- d) 绝对不会

O3. 请问您会推荐亲友利用网络购买同类型的展品吗?

- a) 一定会
- b) 应该会
- c) 应该不会
- d) 绝对不会

O4. 请问您在网络购物过程中平均所花费的时间?

- a) 不超过 10 分钟
- b) 11~30 分钟
- c) 31~45 分钟
- d) 46~60 分钟
- e) 1 小时以上
- f) 并未使用网络购物



O5. 请问您使用网络购物的最主要的原因?

- a) 便利性
- b) 省时
- c) 价格折扣
- d) 安全的交易
- e) 展品的种类或选择
- f) 其它. 请注明:\_\_\_\_\_

## 个人资料

C1. 年龄

- a) 未满 18 岁
- b) 19 ~ 30 岁
- c) 31 ~ 40 岁
- d) 41 ~ 50 岁
- e) 51 ~ 60 岁
- f) 61 岁以上

C2. 您的性别是?

- a) 男性
- b) 女性

C3. 请问您的现在就职情况?

- a) 行政人员
- b) 专业人士(医生, 律师)
- c) 学术界/教育界
- d) 电子/机械/工程
- e) 服务业
- f) 文员
- g) 销售业务
- h) 学生 (全职)
- i) 雇主
- j) 待业中
- k) 退休
- l) 其它

C4. 请问您的教育程度是?

- a) 国中/初中 (含以下)
- b) 高中
- c) 高职/专科学校
- d) 大学
- e) 硕士
- f) 博士
- g) 其它 (专业文凭等)

C5. 通常居住地点?

- a) 中国大陆
- b) 台湾
- c) 香港
- d) 其它

C6. 请问您迄今接触网络的时间是?

- a) 少于 3 年
- b) 3 ~ 5 年
- c) 5 ~ 7 年
- d) 7 年以上

C7. 您平均每天上网的时数?

- a) 少于一小时
- b) 1 ~ 3 小时
- c) 3 ~ 5 小时
- d) 6 ~ 10 小时
- e) 10 小时以上

C8. 您通常上网的地点是?

- a) 家中
- b) 学校/宿舍
- c) 工作场所
- d) 公共地区 (如. 图书馆)
- e) 商业场所 (如. 网咖/网吧)

C9. 请问您愿意参与本主题的深入研究调查吗?

- a) 是的, 请留下您的 email: \_\_\_\_\_
- b) 不, 谢了

**本问卷到此结束, 感谢您的参与和协助这份研究调查.**

親愛的受訪者您好:

這是一份學術問卷研究，目的在於了解網絡購物過程中文化對於信任的影響，無論您是否有過網絡購物的經歷，煩請您撥空協助本問卷的回答，您的寶貴意見將使本研究更有學術價值。

本問卷僅供學術研究之用，您個人的資料及意見絕對保密，不會單獨對外公開，請安心作答。問卷有五個部份的問題，請您耐心填答，務必完成整份問卷，切勿遺漏，您的熱心參與，將有助於本研究的順利完成，在此向您致上由衷的感謝！如有疑問，請聯絡該電子信箱: [da.wu@napier.ac.uk](mailto:da.wu@napier.ac.uk)

請用圈選或**改色**或**粗體**或是 **highlight** 作答。

## 購買行爲

P1. 請問在最近一年中，您的網絡購物次數大約為幾次？

- a) 一次
- b) 2-5 次
- c) 6-10 次
- d) 10 次以上
- e) 未曾使用過網絡購物

P2. 請問您第一次的使用網絡購物的時間是？

- a) 一星期前
- b) 一個月前
- c) 一年前
- d) 1-3 年前
- e) 超過 3 年
- f) 未曾使用過網絡購物

P3. 請問您最近一次的使用網絡購物的時間是?

- a) 一星期內
- b) 一個月以內
- c) 一年內
- d) 超過一年
- e) 未曾使用過網絡購物

P4. 請問您有使用網絡銀行嗎?

- a) 有
- b) 沒有

P5. 請問您最近一次使用網絡購買的商品或服務是? (單選)

- a) 數位商品 (CD, DVD, 影音, 軟體)
- b) 電子電器用品 (影音設備, PC 硬體)
- c) 書籍雜誌
- d) 首飾配件
- e) 鮮花
- f) 服裝鞋類
- g) 線上訂票 (旅遊, 戲劇等.)
- h) 玩具禮品
- i) 金融理財 (股票, 保險等 )
- j) 未曾使用過網絡購物
- k) 其它, 請註明:

請仔細閱讀下列語句，根據語句敘述的情況與您本身觀念或行為相符程度，依照：1 非常不同意，2 不同意，3 一般，4 同意，5 非常同意。

請在適當的方格之中用圈選或是**粗體**或是 **highlighting** 作答。

### 網絡信用

我們想了解您對網絡信用的感想。

	非常不同意	不同意	一般	同意	非常同意
我相信人性是善良的。	1	2	3	4	5
五成以上的網絡賣家會提供完整的產品規格并配有實物圖片。	1	2	3	4	5
超過五成的網絡賣家會提供清楚且具體的產品功能及使用方法。	1	2	3	4	5
超過五成的網絡賣家會承諾某項服務時會確實遵守。	1	2	3	4	5
超過五成的網絡賣家能了解買家的個別需求，并提供個人化服務或產品。	1	2	3	4	5

## 線上交易的安全性

我們想了解您對線上安全的看法。

	非常不同意	不同意	一般	同意	非常同意
超過五成的網絡賣家提供交易的安全機制以保護買家。	1	2	3	4	5
超過五成的網絡賣家通常會確保交易的資料不會突然在交易過程中損毀。	1	2	3	4	5
在交易過程中，超過五成的網絡賣家會提供正確和詳細的交易訊息。	1	2	3	4	5
我會放心在網絡上使用信用卡/金融卡購物，因為我覺得線上交易是安全的。	1	2	3	4	5
對我來說，網絡賣家有複數的交易安全認證是很重要的。	1	2	3	4	5

## 文化影響

	非常不同意	不同意	一般	同意	非常同意
對於是否該使用網絡來購物,我會先參考家人或朋友的建議。	1	2	3	4	5
對於是否該使用網絡購物,我會參考虛擬社群成員(如, 網友或板友)的建議。	1	2	3	4	5
在網絡上購物前,經過朋友或家人推薦的購物網站是很重要的。	1	2	3	4	5
對我來說, 在網絡上購物前, 檢測實體產品的情況是必須的。	1	2	3	4	5



### 購買意願

我們希望能了解您對網絡購物的意願。

	非常不同意	不同意	一般	同意	非常同意
利用網絡購物能讓我節省金錢。	1	2	3	4	5
利用網絡購物能讓我節省時間。	1	2	3	4	5
網絡購物可以增加我的購物效率。(如. 降低比較商品的精力)	1	2	3	4	5
未來一個月內, 我很有可能會在網絡上購買商品。	1	2	3	4	5
我會繼續使用網絡購物的意願大於使用其它的管道(如, 實體商店)。	1	2	3	4	5

### 感知風險

我們希望能了解您對網絡購物風險的接受度。

	非常不同意	不同意	一般	同意	非常同意
相對於傳統的購物渠道, 使用網絡購物會出現更多的產品風險 (如. 物非所值, 缺陷商品)	1	2	3	4	5
相對於傳統的購物渠道, 使用網絡購物會出現更多的財務損失(如. 詐騙, 資料外洩)	1	2	3	4	5

請仔細閱讀下列語句，根據語句敘述的情況與您本身觀念或行為相符程度，在適當的方格之中用圈選或是**粗體**或是 **highlighting** 作答。

	完全沒有		不確定		完全能達成
請問您覺得網絡賣家有達到您所要求的個別服務或展品嗎?	1	2	3	4	5

	非常少有		不確定		時常都有
請問利用網絡購物會有多少機會可以拿到優惠的折扣?	1	2	3	4	5

	完全沒有風險		不確定		非常高的風險
請問您願意承受多大的風險下才會利用網絡來購物?	1	2	3	4	5

## 結果分析

O1. 請問您對最近一次網絡購物的滿意程度?

- a) 非常滿意
- b) 滿意
- c) 一般
- d) 不滿意
- e) 非常不滿意
- f) 未曾使用網絡購物

O2. 請問您未來還會繼續利用網絡購買同類型的展品嗎?

- a) 一定會
- b) 可能會
- c) 應該不會
- d) 絕對不會

O3. 請問您會推薦親友利用網絡購買同類型的展品嗎?

- a) 一定會
- b) 應該會
- c) 應該不會
- d) 絕對不會

O4. 請問您在網絡購物過程中平均所花費的時間?

- a) 不超過 10 分鐘
- b) 11~30 分鐘
- c) 31~45 分鐘
- d) 46~60 分鐘
- e) 1 小時以上
- f) 並未使用網絡購物

O5. 請問您使用網絡購物的最主要的原因?

- a) 便利性
- b) 省時
- c) 價格折扣
- d) 安全的交易
- e) 展品的種類或選擇
- f) 其它. 請註明:\_\_\_\_\_

## 個人資料

C1. 年齡

- a) 未滿 18 歲
- b) 19 ~ 30 歲
- c) 31 ~ 40 歲
- d) 41 ~ 50 歲
- e) 51 ~ 60 歲
- f) 61 歲以上

C2. 您的性別是?

- a) 男性
- b) 女性

C3. 請問您的現在就職情況?

- a) 行政人員
- b) 專業人士(醫生, 律師)
- c) 學術界/教育界
- d) 電子/機械/工程
- e) 服務業
- f) 文員
- g) 銷售業務
- h) 學生 (全職)
- i) 僱主
- j) 待業中
- k) 退休
- l) 其它

C4. 請問您的教育程度是?

- a) 國中/初中 (含以下)
- b) 高中
- c) 高職/專科學校
- d) 大學
- e) 碩士
- f) 博士
- g) 其它 (專業文憑等)

C5. 通常居住地點?

- a) 中國大陸
- b) 台灣
- c) 香港
- d) 其它

C6. 請問您迄今接觸網絡的時間是?

- a) 少於 3 年
- b) 3 ~ 5 年
- c) 5 ~ 7 年
- d) 7 年以上

C7. 您平均每天上網的時數?

- a) 少於一小時
- b) 1 ~ 3 小時
- c) 3 ~ 5 小時
- d) 6 ~ 10 小時
- e) 10 小時以上

C8. 您通常上網的地點是?

- a) 家中
- b) 學校/宿舍
- c) 工作場所
- d) 公共地區 (如. 圖書館)
- e) 商業場所 (如. 網咖/網吧)

C9. 請問您願意參與本主題的深入研究調查嗎?

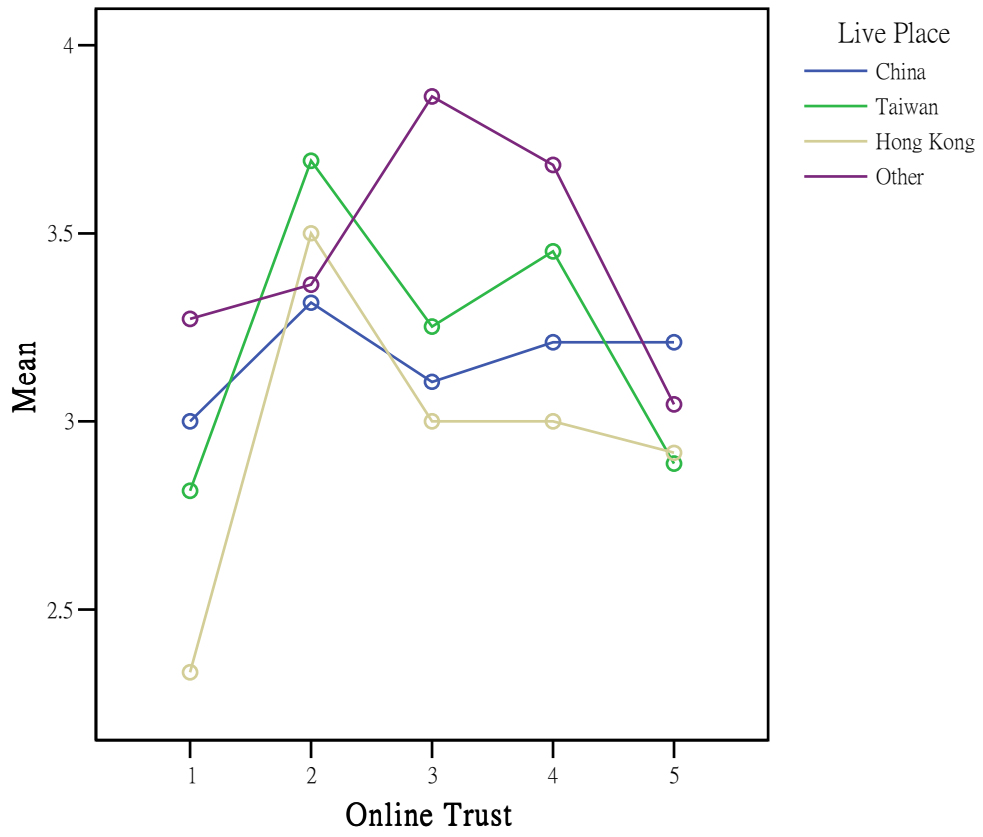
- a) 是的, 請留下您的 email: \_\_\_\_\_
- b) 不, 謝了

**本問卷到此結束, 感謝您的參與和協助這份研究調查.**

## APPENDIX III

### Questionnaire Survey Result

Online trust compare means





Online security compare mean

