

國立交通大學

管理科學系碩士班

碩士論文

消費者特性與網路使用動機

對網路購物之影響研究

Internet Based Consumer Characteristic and Motivations and the
Effect on Online Shopping



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中文摘要

本研究主要在探討網路使用者之消費者特性、網路使用動機與兩者之交互作用對於網路購買意願的影響。以問卷的方式對網際網使用者進行抽樣調查、收集資料。本研究結果顯示，女性網路使用者之網路購買意願比男性較高，且年輕的消費族群和較高所得的網路使用者也具有較高的網路購買意願。在網路使用動機方面，網路購物和交易安全關心與社會化動機是呈現負相關，即愈重視交易安全和社會化動機愈高者愈不會在網路購物。而資訊動機和經濟動機則和網路購買意願呈現正相關。在消費者特性與網路使用動機之交互作用方面，本研究發現交易安全關心與消費者價格敏感度之交互作用與網路購買意願是呈現正相關，即交易安全關心愈高、消費者價格敏感度愈高時，購買意願會提高。而在交易安全關心與消費者品牌比較傾向之交互作用與網路購買意願是呈現負相關，即交易安全關心愈高、消費者品牌比較傾向愈高時，購買意願反而會下降。

關鍵字：網路購物、網路使用動機、消費者特性

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Abstract

The purpose of this research is to examine the Internet using motivations, consumer characteristic, and the interaction effects between Internet using motivations and consumer characteristic on the effects of online shopping. Therefore, Internet users were used as the target of sampling for data collection by questionnaires. The result of this study indicates that the female are more likely shopping online than male, the younger consumers are more likely shopping online, and the consumers with more personal disposable income have more purchasing intention. In the aspect of Internet using motivations, shopping online is negatively related to transaction-based security and privacy concerns and socialization motivation. But the information motivation and economic motivation are both positive effect on the online shopping. In the aspect of interaction effect between Internet using motivations and consumer characteristic, the interaction effect between transaction-based security and privacy concerns and price sensitivity has a positive effect on the online shopping. But the interaction effect between transaction-based security and privacy concerns and brand comparison inclination has a negative effect on the online shopping.

Keywords: Online Shopping, Internet Using Motivations, Consumer characteristic

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CHAPTER 1 Introduction

This chapter consists of three sections. The first section introduces the rapid development of electronic commerce and research motivation. The second section is about referring to research problems in this study. The last part simply describes the research flows of this thesis.

1.1 Research Background and Motivation

According to the Yankee Group public data on August in 2003, America has 18.9 million accounts to use broadband transmission which includes Cable Modem, DSL, T1 special railway line, wireless broadband transmission, or a satellite. It predicts American broadband transmission will reach 26.2 million accounts in the end of 2003 and it will grow to 61.5 million accounts in the end of 2008. According to eMarketer's survey, there are 550 hundred million dollars in American B2C electronic commerce in 2003, 72.6 billion dollars in 2004, and 88.1 billion dollars in 2005. In Taiwan, according to the Focus on Internet News & Data survey the dial-up and broadband transmission accounts. The broadband transmission accounts grow from 2.26 million in 2003 to 3.08 million in 2004. The broadband transmission accounts rate is the fourth in the world. There are totally 6.7 million accounts to use Internet at home in Taiwan. These data indicate the diffusion of the Internet, the broadband transmission rapid grown, and the electronic commerce trend is rapid developing.

When the technology progresses quickly, the Internet provides some business functions. For example, it includes taking information, a sale tools, a whole world channel, and a customer support tools (Peterson, Balasubramanian, Bronnenberg, 1997, Korgaonkar and Wollin 1999). The phenomenon indicates it is important for the

impact of electronic commerce. The consumer behavior is changing. We can not ignore the online shopping in the future.

In past, the literature of the online shopping could be divided into two parts. One is the consumers' characteristic, the other is the consumer characteristic. What kinds of consumer will want to shop online, and what kinds of products do they buy? What is the consumer's motivation to use Internet? The related literature had explored the influence of the Internet using motivations on the effect of the online advertisement attitudes and online shopping (Korgaonkar, and Wolin, 1999; Joines, and Scheufele, 2003). The influence of the consumer characteristic on the effect of the online shopping is also examined. (Kau, Tang, and Ghose, 2003). But the past literature ignore when the consumers shop online and consider the consumer characteristic whether be affected by Internet using motivation or not. Furthermore, the interactive effect may lead the online shopping behavior changed.

Due to the past literature almost explored the single research, this study will use the consumer characteristic to be a moderator variable between the Internet using motivations and online shopping. This study expects to find the interaction effect between these variables and to understand whether the difference of consumer characteristic affects the online shopping result or not.

1.2 Research Purpose

Why the consumer behavior is changing and accepting shopping online? What are their concerns and motivations to use Internet shopping? Do consumer characteristic affect Internet shopping or not? Do the interaction effects between Internet using motivations and consumer characteristic affect Internet shopping or not?

1. The effect of the Internet using motivations on the online shopping.

2. The effect of demographic on the online shopping.
3. The consumer characteristic will influence their shopping online or not.
4. The interactive effect on the Internet using motivation and the consumer characteristic whether the result of the online shopping will change or not.

1.3 Chapters and Flows

This study can be divided into five parts. This first chapter is introduction about the electronic commerce, the motivation, the research purpose, and the direction of the study is forward. The second chapter is literature review which discusses about the Internet using motivation, and the consumer characteristic. The third chapter is this study's research framework, hypothesis, data source, variables, and methodology will be described. In Chapter 4, the empirical results and the sample description will be described. Last, in chapter 5 will discuss the conclusions, the management meanings, how to apply the results to marketing in the Internet, the research limitations and future research.

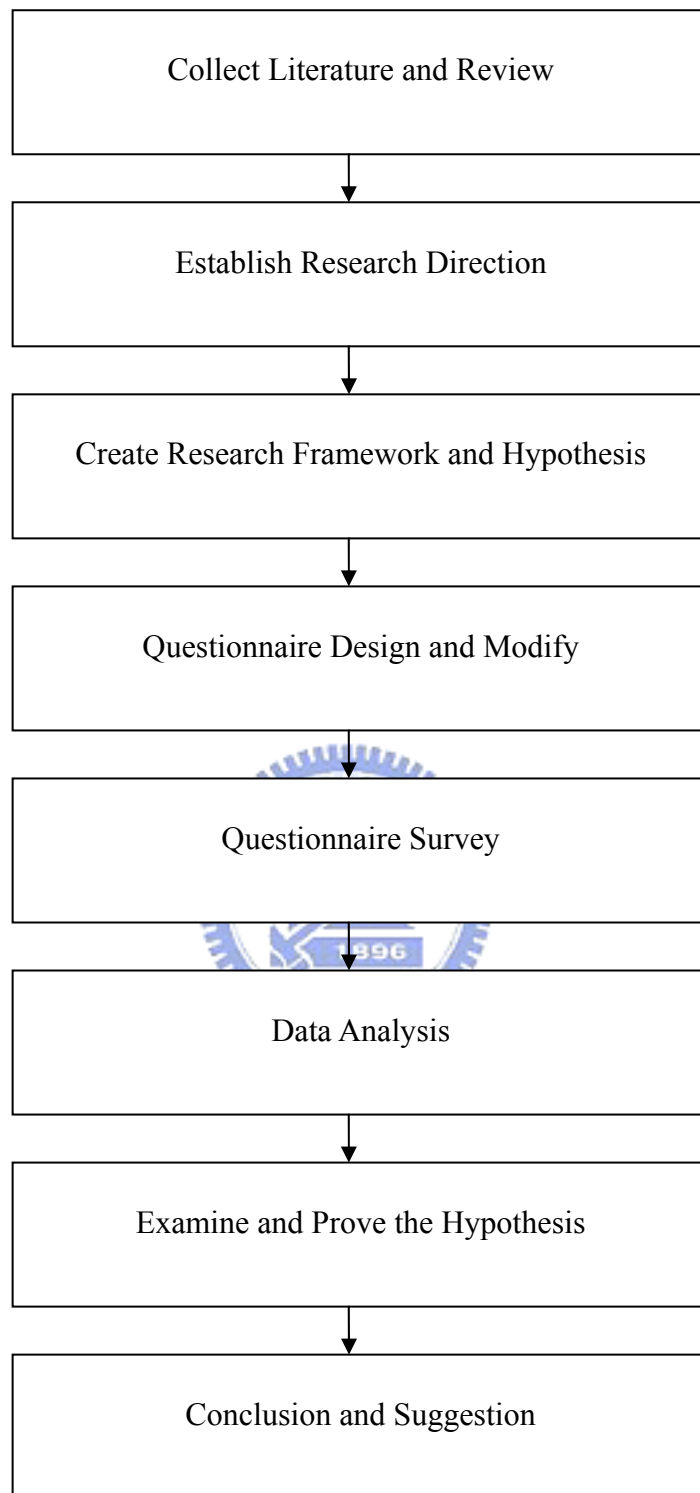


Figure 1.1 Research Flows

CHAPTER 2 Literature Review

This chapter consists of three sections. The first section introduces the Internet using motivations and concerns in Section 2.1. The second section is about the consumer characteristic which includes price sensitivity and brand comparison inclination in Section 2.2. The final section is the relation among demographics, Internet using motivations, consumer characteristic, and online shopping. In Section 2.3, it detailed the relationship among each variable and finally listed all the hypotheses of this thesis in Table 2.1.

2.1 Internet Using Motivations and Concerns

Motivation refers to the processes that lead people to behave as they do. It occurs when a need is aroused that the consumer wishes to gratify. To understand the motivation is to understand why consumers do what they do. Eighmey and Lola (1998) found that the consumers use Internet to view commercial Website. The motivations include the entertainment, information, personal involvement, and continuing relationship. They could use Internet to view the advertisement, find what they want to obtain product information, talk to others on the Internet.

When consumers shop online, they must give their personal information and credit card numbers to transaction. The personal privacy information and the security of transaction is very important concern to the customer to shop on-line. Mitra et al. (1999) also found when the Web user who has little trust of online shopping security, they will not shop online. According to the Harvard Business Review (1997), the invasion of privacy is defined as, “the unauthorized collection, disclosure, or other use of personal information as a direct result of e-commerce.

Salisbury et al. (1998) had previously indicated that retailers who convince Web user that Web retailing sites are secure environments of retail exchanges are also likely to improve the Web user's perceived usefulness for shopping. Korgaonkar and Wolin (1999) use a multivariate analysis to find the factors of Internet using motivations. They find these significant factors:

Factor 1: Social escapism motivations

The motivation is that the Internet users consider the Internet is an interesting activity and can let them to escape the real world. That concept is similar to the escapism reality to search the happy, entertainments. Using the Internet escape the really world.

Factor 2: Transaction-based security and privacy concerns

The Internet users concern the transaction security on the Internet. The personal privacy information and the security of the credit card numbers are both they concern. The motivation stands for the important to the transaction security and personal privacy information.

Factor 3: Information motivation

The Internet users can obtain the data which they want and need via Internet. They use Internet to collect a great quantity of data and to classify becoming the information (Ghose and Dou 1998). These motivations lead the Internet prevail around the world and attract many new users to surf on Internet.

Factor 4: Interactive control motivation

The Web users attracted to sites with many interactive features (Ghose and Dou, 1998). The interactive control function means the Internet users can choose the web sites which they want to surf and which they favor. They can surf anytime and chat to others on Internet. They can join the community which the virtual team of the common favor something or someone to talk, chat, exchange their thinking or

opinions each other. The interactive control function of Internet makes users can personalize themselves. That is one of the reason the Internet could attract mass people to use it.

Factor 5: Socialization motivation

The socialization factor represents the role of the Web as a facilitator of interpersonal communication and activities. A similar sharing of experience and knowledge with friends about different Web sites provides a strong reason for using the Web. Consumers look at the Web as a place in which they can interact and socialize with others with similar interests. A key to profitability on the Web for many companies will be their abilities to build virtual communities on the Web for their customers, like bulletin boards, chat room, ICQ, and MSN.

Factor 6: Economic motivation

This factor shows that the users collect information for learning and educational purpose, and for shopping and buying motivations. When shopping for big-ticket items where price comparisons in an information-rich environment are easy, and the potential for savings significant, the economic motivation to shop on the Web could be strong (Anders, 1998).

This study suggests that Web users' motivations and concerns correlate significantly with the number of hours per day spent on the Web, the percentage of time spent on the Web for both personal and business purposes, and the user's purchasing behavior. According above literature, this study will use six motivations which most of the previous researches discuss to explore the effect on the online shopping.

2.2 The Consumer characteristic

According to the literature, this study chose the price sensitivity and brand comparison inclination to be the variables of consumer characteristic. In this section, this study introduces the price sensitivity of the consumer characteristic in Section 2.2.1, and the brand comparison inclination of the consumer characteristic in Section 2.2.2.

2.2.1 Price Sensitivity

Monroe (1971) defined the price sensitivity is as the product price rise to a particular price range the consumers will not have a purchasing intention to buy the product or will rather purchase the substitutes of other brands. Therefore, this study defines the consumers could tolerate the range of price rise higher (lower), their price sensitivity are lower (higher).

Korgaonkar (1984) had concluded that non-store shopping would be more appealing to price oriented individuals. Interestingly, the Graphic, Visualization, and Usability Center (GVU) surveys indicate price is the least important factor in conducting online purchases (GVU, 1998). GVU suggested that price may not be important to this innovative community which was Internet, because of their high median income and rather than focusing on price, these consumers appeared to want reliability and quality information.

But consumers may use the price as an indicator of product quality (Suri, Long, and Monroe, 2003). For example, the higher (lower) the price, the higher (lower) quality. The relationship between price and perceived quality was based on Heuristic Systematic Model (HSM; Chaiken, 1980). The model enabled consumers to use an

external attribute which like price to evaluate the product's quality (Pechmann ,and Ratneshwar, 1991).

Phau and Poon (2000), this study had presented empirical findings of Internet shopping in Singapore. The product price was one of the factors which influence significantly the consumers shop online. Degeratu, Rangaswamy, and Wu (2000), this study also indicates price was the significant factor of consumer choice behavior in online shopping and traditional supermarkets.

2.2.2 Brand Comparison Inclination

Farquhar (1989) defined the brand is a name, a sign, a design or a symbol; it could increase the functional benefit of product itself, and increase the value of external functional benefit. And the American Marketing Association also defined the brand is a name, a sign, a design or the united above conceptions. The brand was used ensuring the sales products or sales services, and segmenting the products or services from other competitions (Kolter, 1996). The brand could express six meanings to consumers, included characteristic, benefit, value, culture, personality, and user. The consumers could use these to evaluate what they wanted.

Park, Millberg and Lawson (1991) defined the brand is a conception which expresses its image, position, and provides an information type to consumers. The form included three parts, first of all is that the brand conception is a unique abstract meaning of brand. Second, the brand conception usually comes from the specific characteristics of product traits. Third, the brand conception usually forms from the corporation sedulously efforts and deliberately design image.

Park, Jaworsi and MacInnis (1986) defined the brand conception had three categories. First category was the functional oriented brand conception. It emphasized

the function could satisfy consumers' external needs of consumption. Second category was the symbolic oriented brand conception. It emphasized the brand could satisfy consumers' internal needs of consumption. Third category was the experiential oriented brand conception. It emphasize the brand could satisfy consumers' internal needs of excitation and variety. Park, Millberg and Lawson (1991) further simplified the brand conception to two categories. Firs category was the same as past, the functional oriented brand conception. Second category was the prestige oriented brand conception. It emphasized the abstract need of prestige which liked the personal social status and fortune.

Ward and Lee (2000) examined whether consumers used brands as sources of information when shopping online. It indicated that when consumers used Internet to shop, the product brand was one of the most factor to decide buying or not. Degeratu, Rangaswamy, and Wu (2000) also supported that brand name was more valuable when information on fewer attributes was available online. Information asymmetries between buyers and sellers conducted the buyers uncertainly on their want to buy product. They must use product brand to reduce their risks. Therefore, this study's results suggested that brand could facilitate consumers' acceptance of electronic commerce.

2.3 Relation among Demographics, Internet Using Motivations, Consumer characteristic, and Online Shopping

First, this study discusses the relation between demographics and online shopping and brings up the hypothesis $H_{1-1} \sim H_{1-4}$ in Section 2.3.1. Second, this study discusses the relation between consumer characteristic and online shopping and brings up the hypothesis $H_{2-1} \sim H_{2-2}$ in Section 2.3.2. In Section 2.3.3, this study discusses the

relation between Internet using motivations and online shopping and brings up the hypothesis $H_{3-1} \sim H_{3-6}$. Finally, this study discusses the interaction between Internet using motivations and consumer characteristic and brings up the hypothesis $H_{4-1} \sim H_{4-12}$ in Section 2.3.4.

2.3.1 Relation between Demographics and Online Shopping

Many studies showed many demographic variables were strong predictors of online shopping. Korgaonkar and Wolin (1999) found gender and age were significantly correlated to online shopping. Donthu and Garcia (1999) also found the significant difference between online shoppers and non-online shoppers. They found the two groups to differ significantly in terms of age, income. Therefore, this study proposed these hypotheses to test.

H₁₋₁: Males are expected to be more likely to shop online than females.

H₁₋₂: Younger people are expected to be more likely to purchasing intention.

H₁₋₃: Purchasing intention will be positively related to education.

H₁₋₄: Purchasing intention will be positively related to income.

2.3.2 Relationship between Consumer Characteristic and Online Shopping

Dodds, Monroe and Grewal (1991) proposed a conceptual model of the effect of price, brand name and store name on product evaluation. The result of this study indicated when the consumers' perception of brand name and the perception of price were more favorite, the consumers' perception of perceived quality and perceived value and purchasing intention would more positively enhance.

Consumers' perception of brand of product may affect the online shopping. Donthu and Garcia (1999) were the first to bring up the hypothesis that brand of product was higher among online shopper than non-online shoppers, although the hypothesis was not statistically significant. But Balabanis and Reynolds (2001) also examined the influence of brand attitudes on the attitudes of online shoppers. They found the result was positively and significantly.

H₂₋₁: Consumers' price sensitivity will be positively related to purchasing intention.

H₂₋₂: Consumers' brand comparison inclination will be positively related to purchasing intention.

2.3.3 Relationship between Internet Using Motivations and Online Shopping

Korgaonkar and Wolin (1999) found social escapism motivation, transaction-based security and privacy concerns, information motivation, interactive control motivation, socialization motivation, and economic motivation were correlated to online shopping. The social escapism motivation, information motivation, interactive control motivation, and socialization motivation were positively correlated to online shopping, only transaction-based security and privacy concerns was negatively correlated to online shopping. And Joines, Scherer, and Scheufele (2003) found the results support the relationship among transaction-based security and privacy concerns, information motivation, interactive control motivation, socialization motivation to online shopping, but the economic motivation was not significantly to online shopping.

H₃₋₁: Purchasing intention will be positively related to social escapism motivation.

H₃₋₂: Purchasing intention will be negatively related to transaction-based security and privacy concerns.

H₃₋₃: Purchasing intention will be positively related to information motivation.

H₃₋₄: Purchasing intention will be positively related to control motivation.

H₃₋₅: Purchasing intention will be positively related to socialization motivation.

H₃₋₆: Purchasing intention will be positively related to economic motivation.

2.3.4 Interaction between Internet Using Motivations and Consumer characteristic

The study of the impact of the Internet and consumer motivations on evaluation of prices (Suri, Long, and Monroe, 2003) explored the interactions of information motivation and price on the effect of consumer's perceived quality, sacrifice, and value. Due to the edification of the research, and because of the past literature almost explore the single research, this study will use the consumer characteristic to be a moderator variable between the Internet using motivations and online shopping. This study expects to find the interaction effect between these variables and to realize whether the difference of consumer characteristic affects the on-line shopping result or not.

H₄₋₁: Purchasing intention will be positively related to the interactive effect of the social escapism motivation and price sensitivity.

H₄₋₂: Purchasing intention will be positively related to the interactive effect of the transaction-based security and privacy concerns and price sensitivity.

H₄₋₃: Purchasing intention will be positively related to the interactive effect of the information motivation and price sensitivity.

H₄₋₄: Purchasing intention will be positively related to the interactive effect of the control motivation and price sensitivity.

H₄₋₅: Purchasing intention will be positively related to the interactive effect of the socialization motivation and price sensitivity.

- H₄₋₆:** Purchasing intention will be positively related to the interactive effect of the economic motivation and price sensitivity.
- H₄₋₇:** Purchasing intention will be positively related to the interactive effect of the social escapism motivation and brand comparison inclination.
- H₄₋₈:** Purchasing intention will be negatively related to the interactive effect of the transaction-based security and privacy concerns and brand comparison inclination.
- H₄₋₉:** Purchasing intention will be positively related to the interactive effect of the information motivation and brand comparison inclination.
- H₄₋₁₀:** Purchasing intention will be positively related to the interactive effect of the control motivation and brand comparison inclination.
- H₄₋₁₁:** Purchasing intention will be positively related to the interactive effect of the socialization motivation and brand comparison inclination.
- H₄₋₁₂:** Purchasing intention will be positively related to the interactive effect of the economic motivation and brand comparison inclination.

Table 2.1 The Hypotheses in This Study.

Variables	Hypotheses
Demographics	H₁₋₁: Males are expected to be more likely to shop online than females.
	H₁₋₂: Younger people are expected to be more likely to purchasing intention.
	H₁₋₃: Purchasing intention will be positively related to education.
	H₁₋₄: Purchasing intention will be positively related to income.
Consumer Characteristic	H₂₋₁: Consumers' price sensitivity will be positively related to purchasing intention.
	H₂₋₂: Consumers' brand comparison inclination will be positively related to purchasing intention.
	H₃₋₁: Purchasing intention will be positively related to social escapism motivation.

Internet Using Motivations	H₃₋₂: Purchasing intention will be negatively related to transaction-based security and privacy concerns.
	H₃₋₃: Purchasing intention will be positively related to information motivation.
	H₃₋₄: Purchasing intention will be positively related to control motivation.
	H₃₋₅: Purchasing intention will be positively related to socialization motivation.
	H₃₋₆: Purchasing intention will be positively related to economic motivation.
Interaction between Consumer Characteristic and Internet Using Motivations	
Price Sensitivity * Motivations	H₄₋₁: Purchasing intention will be positively related to the interactive effect of the social escapism motivation and price sensitivity.
	H₄₋₂: Purchasing intention will be positively related to the interactive effect of the transaction-based security and privacy concerns and price sensitivity.
	H₄₋₃: Purchasing intention will be positively related to the interactive effect of the information motivation and price sensitivity.
	H₄₋₄: Purchasing intention will be positively related to the interactive effect of the control motivation and price sensitivity.
	H₄₋₅: Purchasing intention will be positively related to the interactive effect of the socialization motivation and price sensitivity.
	H₄₋₆: Purchasing intention will be positively related to the interactive effect of the economic motivation and price sensitivity.
Brand Comparison Inclination * Motivations	H₄₋₇: Purchasing intention will be positively related to the interactive effect of the social escapism motivation and brand comparison inclination.
	H₄₋₈: Purchasing intention will be negatively related to the interactive effect of the transaction-based security and privacy concerns and brand comparison inclination.
	H₄₋₉: Purchasing intention will be positively related to the interactive effect of the information motivation and brand comparison inclination.
	H₄₋₁₀: Purchasing intention will be positively related to the interactive effect of the control motivation and brand comparison inclination.

	H₄₋₁₁ : Purchasing intention will be positively related to the interactive effect of the socialization motivation and brand comparison inclination.
	H₄₋₁₂ : Purchasing intention will be positively related to the interactive effect of the economic motivation and brand comparison inclination.



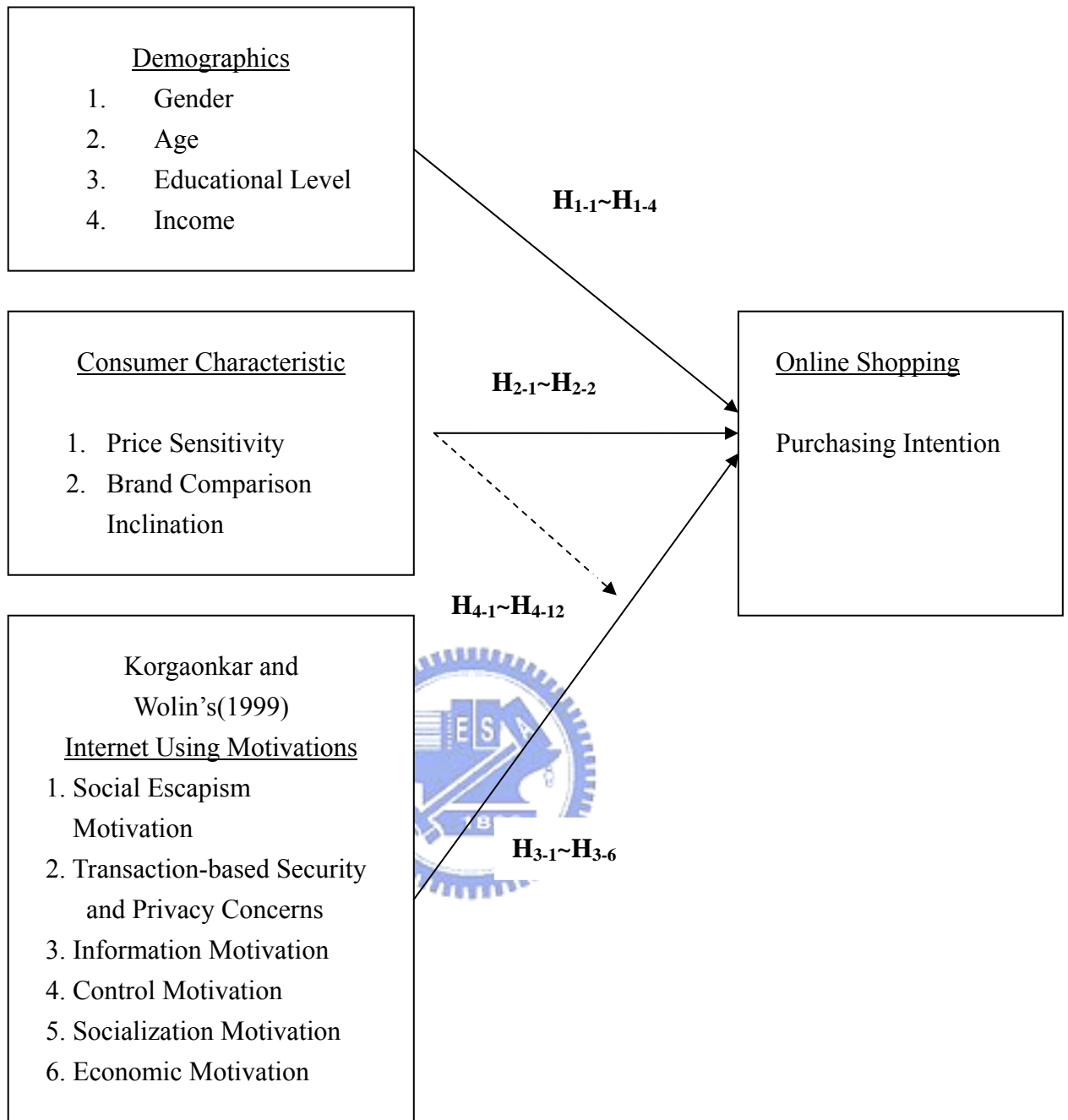


Figure 2. 1 Research Framework

CHAPTER 3 Methodology

This chapter consists of four sections. The first section introduces the subjects of research and sampling method in Section 3.1. The second section is about how to design the questionnaire in Section 3.2. The third section is the operational definition and explains which item is measured which variable. In Section 3.4, it's about analytic methods which include descriptive statistics, reliability and validity analysis, Pearson's product-moment correlation analysis, and stepwise regression analysis.

3.1 The Subjects of Research and Sampling Method

In this section, this study introduces how to survey the subjects of research and sampling method. First, this study explains why the survey used the network questionnaire in section 3.1.1. Then, using the statistic formula (1) calculates the sample size which could stands for the population of Internet users in Section 3.1.2. Finally, this study introduces the sampling method in Section 3.1.3.

3.1.1 Subjects of Research

This study wants to explore the motivations for consumer Web use and the perception of consumer characteristic of consumer. The influence of the two factors affects online shopping behavior. Therefore, the subjects of research must be focus on the groups of Internet users or the people who ever used. For this reason, this study will use the online questionnaire to survey. The online questionnaire can ensure that the samples must be the Internet users or ever used.

Moreover, the network questionnaire survey also has these advantages include

the questionnaire retrieve fast and save cost, not limited by time and space, questionnaire design is elastic, protect the consumer privacy, not interfered with visitor, and decrease the key in data to construct database (Strauss, El-Ansary and Frost, 2003). But the online questionnaire sampling is one kind of the convenience samplings. It also has some disadvantages. The most serious problem is the representative sample. Because of the convenience sampling is non-probability sampling. We can't promise these samples can represent the population (Kerlinger, and Lee, 2002).

3.1.2 Sample Size

The sample size this study used the formula (1) to calculate. The n is the sample size that this study want to survey; α is the confidence lever, this study assume $\alpha=5\%$. \hat{p} is the proportion of the sample size and population . Because we want to estimate the sample size, this study assume the $\hat{p}=1/2$. E is the maximum error. This study assumes E is the 0.05. According to the formula, this study expect to survey 385 samples.

$$n = \frac{z_{\alpha/2}^2 * \hat{p}(1 - \hat{p})}{E^2} \quad (1); \quad n = \frac{(1.96)^2 * 1/2 * 1/2}{(0.05)^2} = 384.16$$

3.1.3 Sampling Method

According to the above-mentioned, this study uses the network questionnaire to survey. The questionnaire will be sited on Website that IP address is <http://140.113.59.167:8080/index.htm>. This study uses the Bulletin Broad System and E-mail to publicize the Website. The questionnaire was hosted for three weeks from 14th February to 9th March 2005.

3.2 Questionnaire Design

The first form of questionnaire was to stand on the scale of the literature review and to adjust appropriately. The pretest of questionnaire of samples size was forty subjects. According to the subjects' suggestions of pretest, this study adjusted the wording of items in order to clearly express the context of the questionnaire. And in order to ensure the content validity of the questionnaire, the pretest used the factor analysis to examine the construct validity of the questionnaire, and the reliability analysis to examine the reliability of the questionnaire.

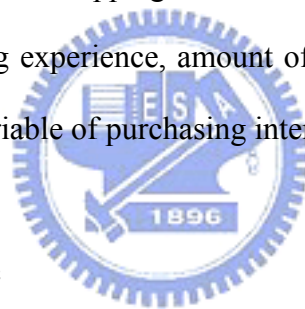
According to the result of the factor analysis of pretest, this study found the interactive control motivation and the socialization motivation will make the subjects confused, the items of interactive are similar to the items of socialization to subjects. In order to improve the problem, this study adjusted the interactive control motivation variable to control motivation variable.

The survey questionnaire was divided into four sections (Appendix 1). There were 9 questions in the first part which is concerning consumer online shopping behavior and experience. There were 8 questions in the second part which is concerning consumer characteristic. There were 30 questions in the third part which is

the reason of consumer to use Internet. Finally, the fourth part was devoted to basic demographic information that would be used for classification purposes.

3.3 The Operational Definition and Measure of Variables

In this section, this study defines all the variables and explains which items in the questionnaire are be used to measure the variables. The variables could be discriminated between independent variables and dependent variables. The independent variables include consumer characteristic, Internet using motivations, and demographic variables. This study will detail theses independent variables in Section 3.3.1, 3.3.2, 3.3.3. The online shopping behaviors include purchasing intention, repurchasing intention, buying experience, amount of money and buying items. This study mainly discusses the variable of purchasing intention in Section 3.3.4.



3.3.1 Consumer Characteristic

To measure the price sensitivity and brand comparison inclination of consumer characteristic are related to consumers online shopping or not. The questionnaire design refers to scale of the study of typology of online shoppers (Kau, Tang, Ghosh, 2003). 5 items about brand comparison inclination and 3 items about price sensitivity are created to measure. The 8 items are put on the second part in the questionnaire. The scale used to measure these items was Likert-based with 1 signifying “Strongly disagree” and 5 denoting “Strongly agree”.

Table 3.1 Items for Consumer Characteristic.

Consumer Characteristic	Items
Price Sensitivity	6, 7, 8
Brand Comparison Inclination	1, 2, 3, 4, 5

3.3.2 Internet Using Motivations

According to scale of the study of a multivariate analysis of web usage (Korgaonkar & Wolin, 1999), this study modified some items after pretest. The six motivations are social escapism motivation, transaction-based security and privacy concerns, information motivation, control motivation, socialization motivation, economic motivation. There are 30 items on the third part in the questionnaire, 5 items to measure each Internet using motivations, such as items 2, 10, 12, 18, 24 is supposed to measure the social escapism motivation. The scale used to measure these items was Likert-based with 1 signifying “Strongly disagree” and 5 denoting “Strongly agree”. The following table can clearly express the items of motivations.

Table 3.2 Items for each Internet Using Motivation.

Internet Using Motivations	Items
Social Escapism Motivation	2, 10, 12, 18, 24
Transaction-based Security and Privacy Concerns	1, 9, 17, 25, 27
Information Motivation	4, 6, 15, 19, 23
Control Motivation	3, 14, 20, 28, 30
Socialization Motivation	5, 8, 22, 26, 29
Economic Motivation	7, 11, 13, 16, 21

3.3.3 Demographic

The variable of demographic includes gender, age, educational level, income which includes average income per month and average disposable income per month. There are 8 items about consumers' personal base information on the final part in the questionnaire.

3.3.4 Online Shopping Behavior

There are 9 items about consumers' online shopping behavior and experience on the first part in the questionnaire. The variable of online shopping behavior includes purchasing intention, repurchasing intention, buying experience, amount of money, and buying items. The scale of online purchasing intention and repurchasing intention refer to the study of purchasing intention in a traditional retail environment (William, Kent, and Dhruv, 1991). The scale used to measure these items was Likert-based with 1 signifying "Strongly disagree" and 5 denoting "Strongly agree". The higher score means the consumers' online purchasing intentions are higher.

Table 3.3 Items for Online Shopping Behavior.

Shopping Behavior	Items
Purchasing Intention	3, 4
Repurchasing Intention	5, 6
Buying Experience	7
Amount of Money	8
Buying Items	9

3.4 Analytic Methods

This study used the statistic software SPSS 11.5 version to analyze the data which are collected from Internet questionnaire. The statistic method includes descriptive statistics, reliability and validity analysis, Pearson's product-moment correlation analysis, and stepwise regression analysis.

3.4.1 Descriptive Statistics

In order to know the structure of consumers' Internet using experience, online shopping behavior and, demographic which includes gender, age, educational level, income, this study used the descriptive statistics to describe their amounts, percentages, means and variances.



3.4.2 Reliability and Validity Analysis

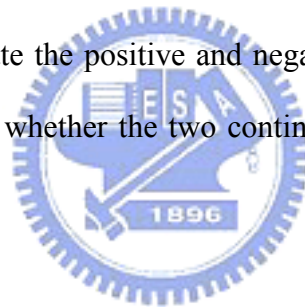
In order to test the reliability and validity of items of each variable, this study used the factor analysis to decide the items of each variable. The validity analysis used the factor analysis to test the priori structure of variables, reduced the items which of the results were not good. And then the reliability analysis used the Cronbach's α coefficient to test the internal consistence of items, deleted the bad items to ensure the reliability and quality of questionnaire.

3.4.3 ANOVA and LSD of Multiple Comparisons

This study used the analysis of variance (ANOVA) and Fisher's least significant difference (LSD) of multiple comparisons to explore the demographic variables which were gender, age, educational level, occupation, and personal disposable income affect the difference of means among independent variables which were Internet using motivations and consumer characteristic.

3.4.4 Pearson's Product-moment Correlation Analysis

This study used the Pearson's product-moment correlation analysis to realize the relations among variables. According to the correlation coefficient of correlation matrix, it could clearly indicate the positive and negative linear relation between the two continues variables. And whether the two continues variables were significantly correlation or not.



3.4.5 Stepwise Regression Analysis

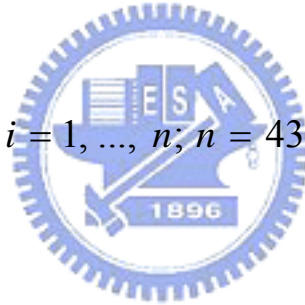
In order to ensure the accuracy and reliability of regression analysis, this study first examined the collinearity among independent variables. And according to the premise of regression analysis, the residual must be normal distribution. Therefore, this study did the residual analysis to examine the residual were normal distribution or not.

After the residual analysis, this study used stepwise regression analysis to select explainable independent variables from demographics variables, Internet using motivations, and consumer characteristic. In order to test the interaction effect of the Internet using motivations and the consumer characteristic, the model added the

interaction terms. Each interaction term stand for one interaction effect variable. The full regression model is shown as follows:

$$\begin{aligned}
Y_i = & \alpha + \beta_1 Gen_i + \beta_2 Age_i + \beta_3 Edu_i + \beta_4 DInc_i \\
& + \beta_5 P_i + \beta_6 B_i + \beta_7 SE_i + \beta_8 TP_i + \beta_9 Inf_i + \beta_{10} Ctrl_i + \beta_{11} Soc_i + \beta_{12} Eoc_i \\
& + \beta_{13}(P_i \times SE_i) + \beta_{14}(P_i \times TP_i) + \beta_{15}(P_i \times Inf_i) + \beta_{16}(P_i \times Ctrl_i) + \beta_{17}(P_i \times Soc_i) + \beta_{18}(P_i \times Eoc_i) \\
& + \beta_{19}(B_i \times SE_i) + \beta_{20}(B_i \times TP_i) + \beta_{21}(B_i \times Inf_i) + \beta_{22}(B_i \times Ctrl_i) + \beta_{23}(B_i \times Soc_i) + \beta_{24}(B_i \times Eoc_i) + \varepsilon_i
\end{aligned}$$

$$\varepsilon_i \stackrel{iid}{\sim} N(0, \sigma^2), \quad i = 1, \dots, n; n = 432 \quad (2)$$



Y_i = purchasing intention;

Gen_i = gender; Age_i = age; Edu_i = education level;

$DInc_i$ = average disposable income every month;

P_i = price sensitivity; B_i = brand comparison inclination;

SE_i = social escapism motivation; Inf_i = information motivation;

TP_i = transaction-based security and privacy concerns;

$Ctrl_i$ = control motivation; Soc_i = socialization motivation;

Eoc_i = economic motivation

CHAPTER 4 Data Analysis

This chapter mainly explains and analyzes the data which acquired from Internet questionnaire and step by step analyzes the data by chapter 3.5 analysis methods. First, proceeding to the samples' descriptive statistic can let us realize the samples' characteristic. Then, this study proceeds to the variables' reliability and validity analysis. Finally, using the regression analysis tests the hypotheses.

4.1 The Structure of Samples

During the 14th February to 9th March 2005, the questionnaire was sited on Website that IP address was <http://140.113.59.167:8080/index.htm>. The retrieved sample size is 458, deducts the repeat samples whose e-mail address are the same. The valid samples are 431. According to statistic formula (1) in Chapter 3, this study expects to collect sample 385, actually this study collected the samples 431. Therefore, the sample size 431 achieves collected goal of this study and can proceed to the next further analysis.

This study uses the retrieved samples to do the frequencies of descriptive statistics. It indicates the Internet users' experiences are most in 5~7 years and the average using are about 5.719 years. And the average time per day that the Internet users spend to surf online is about 2.364 hours (Table 4.1). It's a very high number to a person to spend more two hours a day surfing online. It means surfing online is a routine to people every day.

According to the Taiwanese Internet using survey of yam Website which valid questionnaires in 2004 were 13,040, the ratio that the Internet users had shopping experience in past six months was 66% in 2004, 64% in 2003, and 57% in 2002. The

statistic data represents the Internet users shopping online were gradually increasing. Therefore, the result of this study is reasonable. The ratio that the Internet users had shopping experiences in past six months was 76.6%. The over six times shopping experiences of the Internet users were 20.4% (Table 4.2). In this study, the Internet users' buying amount of money mainly centralizes under NT 1,000 dollars. The ratio is 44.1% (Table 4.3). This study expects the reason of this result is because of the retrieved samples are almost students whose ratio is 69.4%.

Table 4.1 The Distribution of the Internet Users' Experience & Time.

Items		Sample Size	Percent (%)
Using Internet Experience	Under 1 year	6	1.4
	1~3 years	33	7.7
	3~5 years	116	26.9
	5~7 years	138	32
	Over 7 years	138	32
	Average Years	About 5.719 years	
Using Time Per Day	under 30 minutes	17	3.9
	30~60 minutes	78	18.1
	1~2 hours	113	26.2
	2~3 hours	69	16.0
	over 3 hours	154	35.7
	Average Hours	About 2.364 hours	

Table 4.2 The Distribution of the Internet Users' Shopping Experience.

Shopping Experience	Sample Size	Percent (%)
0 time	101	23.4
1 time	71	16.5
2~3 times	109	25.3
4~5 times	62	14.4
over 6 times	88	20.4

Table 4.3 The Distribution of the Internet Users' Buying Amount of Money.

Amount of Money	Sample Size	Percent (%)
Under NT 1,000 dollars	190	44.1
NT 1,001~2,000 dollars	78	18.1
NT 2,001~3,000 dollars	51	11.8
NT 3,000~4,000 dollars	28	6.5
NT 4,000~5,000 dollars	18	4.2
Over NT 5,000 dollars	66	15.3

About the Internet users' purchasing intention, this study uses two items to measure the purchasing intention variable. So that the average scores of variables will occur point five. According to Table 4.4, the distribution of the Internet users' purchasing intention is right skewed. It means the most users have higher intentions to shopping online.

Table 4.4 The Distribution of the Internet Users' Purchasing Intention.

	Items	Sample Size	Percent (%)
Purchasing Intention (Scores)	Strongly Disagree (1.0)	14	3.2
	(1.5)	6	1.4
	Disagree (2.0)	50	11.6
	(2.5)	25	5.8
	No Opinion (3.0)	134	31.1
	(3.5)	43	10.0
	Agree (4.0)	102	23.7
	(4.5)	19	4.4
	Strongly Agree (5.0)	38	8.8

About the Internet users buying items, the highest three items are clothing and accessory (41.9%), books (41.5%), and cosmetic (36.6%). This study expects the reason of result, the users mainly prefer buying clothing and accessory, books and cosmetic, is because of the retrieved samples are almost females whose ratio is 62.9%.

Table 4.5 The Distribution of the Internet Users' Buying Items. (Multiple Choices)

Items	Sample Size	Percent (%)
Books	179	41.5
Computers (software and hardware)	70	16.2
Tickets for Airlines/Railway/Ship, etc	64	14.8
Records/CDs/music	53	12.3
News	16	3.7
Flower Goods	15	3.5
Cosmetic	158	36.6
Clothing and Accessory	181	41.9
Stock Exchange (Online Exchange)	31	7.2
Travel, Rent Cars, Order the Room	54	12.5
Others	68	15.7

According to the Table 4.6, the distribution of the demographic variables which include gender, age, educational level, occupation, average income a month, and average disposable income a month. In the aspect of gender, the ratio between male and female is nearly 1:2 (37.1%:62.9%). According to the Taiwanese Internet using survey of yam Website which valid questionnaires in 2004 were 13,040, the ratio between male and female were 49.6%: 50.4% in 2002, 47%:53% in 2003, 41%:59% in 2004. The ratio of male is gradually decreasing, and the ratio of female is gradually increasing. Therefore, the ratio between male and female of this study was reasonable and nearly realistic world.

In the aspect of age, the highest three were the 21~25 years (57.3%), the 26~30years (19%), and the 15~20 years (14.6%). In the aspect of educational level, the Internet users almost had high educational level. The ratio of educational lever over university was 98.6%. In the aspect of occupation, the subjects were mainly

students whose ratio was 69.4%. Because of this reason, the average income a month focused on under NT 15,000, and had 123 subjects had zero income. In the aspect of disposable income, the subjects focused on NT 5,000~10,000 (45.5%). Because of the disposable income would stand for personal consuming ability than average income. Therefore, this study will use the disposable income to analyze and test the H_{1-3} .

Table 4.6 The Distribution of the Demographic Variables.

Item		Sample Size	Percent (%)
Gender	Male	160	37.1
	Female	271	62.9
Age	Under 14 years	0	0
	15~20 years	63	14.6
	21~25 years	247	57.3
	26~30 years	82	19.0
	31~35 years	26	6.0
	36~40 years	9	2.1
	over 41 years	4	0.9
Educational Level	Under Junior High School	0	0
	Senior High School	6	1.4
	University	247	57.3
	Graduate School	178	41.3
Occupation	Students	299	69.4
	Soldiers, Public Servants, Teachers	11	2.6
	High Technology Staffs	39	9.0
	General Service Industry	55	12.8
	Finance Service	6	1.4
	SOHO	4	0.9
	Housewife	0	0
	Seeking job	7	1.6
	Retirement	0	0

	Others	10	2.3
Average Income Per Month	Zero	123	28.5
	Under NT 15,000	176	40.8
	NT 15,001~30,000	49	11.4
	NT 30,001~45,000	48	11.1
	NT 45,001~60,000	19	4.4
	NT 60,001~75,000	7	1.6
	NT 75,001~90,000	6	1.4
	Over NT90,001	3	0.7
Average Disposable Income Per Month	Under NT 5,000	87	20.2
	NT 5,001~10,000	196	45.5
	NT 10,001~20,00	92	21.3
	NT 20,001~30,000	29	6.7
	NT 30,001~40,000	15	3.5
	NT 4,001~50,000	4	0.9
	NT 50,001~60,000	5	1.2
	NT 60,001~70,000	1	0.2
	Over NT70,001	2	0.5

4.2 The Reliability and Validity of Independent Variables

In order to reduce the items of independent variables and examining the variable internal consistency of each factor, this study proceeds to reliability and validity analysis about the Internet using motivations and the consumer characteristic. In the validity analysis, this study uses the principal component analysis of factor analysis to extract the common factor. According to the rule of extraction, this study extracts the factors which eigenvalues over 1 and then the proceeds to varimax rotation. After the varimax rotation, the factor loading of modulus of items must be over 0.5, else deletes the items which factor loading are under 0.5. Finally, according to the meaning of items of each factor proceeds to give each factor a name.

After the validity analysis, this study uses the reliability analysis to measure the internal consistency of items of the same factor. Generally, the Cronbach's α which

value over 0.7 will be better (De Vellis, 1991). In fact, the α critical point doesn't limit its value. Gronlund (1985) indicated the Cronbach's α of most scale which the researcher made was between 0.6~0.85. Therefore, this study chose the Cronbach's α was 0.6 as a critical point. In next Section, this study will explain the results of the validity and reliability about the consumers' Internet using motivations and consumer characteristic.

4.2.1 The Reliability and Validity of Internet Using Motivations

There are thirty items about Internet using motivations. After reliability and validity analysis, the items reduce to twenty-four items. The reduced items were items 3, 7, 11, 14, 20, 24 which factor loading after rotation were under 0.5.

Compared with the Table 3.2 that this study constructed items for each motivation, some items for each motivation strayed from original constructed motivations. The item 5 was originally belonged to social motivation, but it was belonged to information motivation after factor analysis. This study explains because of Internet users surf online in order to get some information which they wanted, so that they thought surfing on Internet has become one part of their life. The item 29 was originally belonged to social motivation, but after factor analysis it was belonged to control motivation. This study explains Internet users could control they want to talk information of the webs to friends or not. The items 25 and 27 were originally belonged to transaction-based security and privacy concerns, but after factor analysis it was belong to control motivation. The item 25 meant filling out personal information on Website was not security; therefore, Internet users could control themselves to decide they wanted to fill out personal information on Website or not. The similar reason of item 27 were Internet users could control themselves to measure

the goodwill of online shop and further decided to buy online or not. The item 15 was originally belonged to information motivation, but after factor analysis it was belonged to economic motivation. The item 15 meant Internet users could get some cheap or free information. It had two meanings to subjects, one was information motivation, and the other was economic motivation because of free. Therefore, the item 15 was reasonably belonged to economic motivation in this study.

In the aspect of reliability of items, the Cronbach's α of total Internet using motivations is 0.8364. The Cronbach's α of each factor separately is information motivation 0.8083, control motivation 0.7607, social motivation 0.7242, transaction-based security and privacy concerns 0.6199, socialization motivation 0.5789, and economic motivation 0.600. The Table 4.7 lists each factor name, mean of items, standard deviation of items, loading eigenvalue of items, and the reliability of factors.

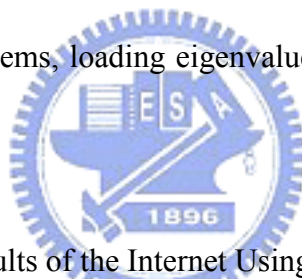


Table 4.7 Factor Analysis Results of the Internet Using Motivations.

Internet Using Motivations and Items	Mean	Std. Deviation	Loading Eigenvalue	Reliability
Factor 1-Information Motivation				
4. I can know the most new information on the Internet.	4.26	.616	.786	.8083
6. I can search the useful information on the Internet.	4.34	.644	.776	
5. Surfing on Internet has become one part of my life.	4.34	.713	.701	
23. Internet can help me to obtain mass of information easily and quickly.	4.25	.649	.559	
19. I can learn knowledge of varied fields on the Internet.	3.95	.705	.558	
Factor 2-Control Motivation				
28. I can decide whether continue	4.21	.623	.690	.7607

surfing the Website.				
29. I often talk the information of the webs to friends.	4.16	.665	.682	
27. The goodwill of the online shop is a major concern for me when buying online.	4.28	.637	.679	
30. I can decide when to surf on Internet and what to view.	4.21	.730	.626	
25. I think when I fill out my personal information online, it would possible be disclosed.	4.22	.764	.554	
Factor 3-Social Escapism Motivation				
10. Surfing on Internet can let me skip the trouble, temporarily not think the trouble.	3.22	.868	.764	.7242
2. Surfing on Internet can let me forget the reality.	2.60	.964	.741	
18. Surfing on Internet can let me not feel lonely.	3.20	.895	.660	
12. Surfing on Internet can let me feel good, relax my mood.	3.63	.735	.638	
Factor 4-Transaction-based Security and Privacy Concerns				
1. Buying online lacks the feel of security.	3.52	.893	.790	.6199
9. I can't expect the product completeness when buying online.	3.95	.762	.732	
17. I think using the credit card to deal online is lack of security.	3.82	.921	.638	
Factor 5-Socialization Motivation				
22. I can use the Internet to contact with my family or friends.	4.11	.787	.743	.5789
26. I will date friends to surf on Internet.	3.75	.846	.603	
8. I can expand my interpersonal relationship online.	3.14	.908	.593	
Factor 6-Economic Motivation				
21. I can use the Internet to deal in stock, and save the procedure fee	3.46	.866	.760	.600

16. I can use Internet to compare the product of price difference, and to find the cheapest price.	3.97	.699	.572	
13. Shopping on Internet can save time and feel convenient.	3.50	.834	.527	
15. Internet can help me to obtain some cheap or free information.	4.04	.710	.526	

4.2.2 The Reliability and Validity of Consumer Characteristic

There are eight items about consumers' perceptions of consumer characteristic. After reliability and validity analysis, the items reduce to seven items. The reduced item was item 3 which factor loading after rotation was under 0.5. Compared with the Table 3.1 that this study constructed items for consumer characteristic which are price sensitivity and brand comparison inclination, the difference was the item 3 reduced and no other items shifted.

In the aspect of reliability of items, the Cronbach's α of consumer characteristic is 0.7638. The Cronbach's α of price sensitivity is 0.809, and brand comparison inclination is 0.6784. This study proceeds the reliability analysis find that if item 3 deleted, the Cronbach's α will increase from 0.6574 to 0.6784. This finding supported the method of validity analysis. Item must be deleted, if factor loading after rotation was under 0.5. The Table 4.8 lists each factor name, mean of items, standard deviation of items, loading eigenvalue of items, and the reliability of factors.

Table 4.8 Factor Analysis Results of the Consumer Characteristic.

Consumer Characteristic and Items	Mean	Std. Deviation	Loading Eigenvalue	Reliability
Price Sensivity				
8. When considering purchasing online, I do more brand price comparisons than in a traditional retail environment.	4.05	.848	.875	.809
6. When considering purchase online, I am more price sensitive compared to that in a traditional retail environment.	4.05	.805	.815	
7. When considering purchasing online, I react more to sales promotions compared to that in a traditional retail environment.	3.84	.868	.806	
Brand Comparison Inclination				
2. When considering purchase online, I tend to tradeoff the strengths and weaknesses of brand before deciding how attractive the brand is.	3.99	.646	.795	.6784
1. When considering purchase online, I actively evaluate a large number of brands then when I shop in a traditional retail environment.	3.86	.785	.696	
4. When considering purchase online, I do an overall comparison of different brands before I decide which brand is my most preferred.	3.78	.805	.684	
5. When considering purchase online, I prefer to buy well-known brands.	3.76	.916	.545	

4.3 The ANOVA and Multiple Comparisons of Independent Variables and Demographic Variables

This section uses the analysis of variance (ANOVA) and Fisher's least significant difference (LSD) of multiple comparison method to explore the demographic variables which are gender, age, educational level, occupation, and personal disposable income affect the difference of means among independent variables which are Internet using motivations and consumer characteristic. First according to the previous the result of reliability and validity analysis, this study uses the weighted averages method to measure each score of factors. Then each mean is the base unit to compare in ANOVA.

4.3.1 The ANOVA of Gender Variable

Table 4.9 explains the differences of gender affects the differences of means among Internet using motivations and the consumer characteristic. Because of the gender variable is a dummy variable which is just two categories. It can't use the multiple comparison method to compare. It just needs to use the ANOVA and can find the significant or not. Therefore, in Table 4.9 there are no columns about multiple comparisons.

According to Table 4.9, this study finds that there is a significant difference in control motivation between male and female. The female has higher control motivation than male. But in economic motivation, the male has higher motivation than female.

Table 4.9 The ANOVA of the Gender Variable.

Variables	Factor Name	Gender		F Value	P Value
		μ_1 Male (n=160)	μ_2 Female (n=271)		
Internet Using Motivations	Social Escapism	3.151	3.170	0.090	0.764
	Transaction Security	3.692	3.808	3.274	0.071
	Information	4.200	4.246	0.869	0.352
	Control	4.122	4.272	9.618	0.002**
	Socialize	3.708	3.646	1.004	0.317
	Economic	3.804	3.705	3.633	0.057 ⁺
Consumer Characteristic	Price Sensitivity	3.913	4.020	2.251	0.134
	Brand Comparison	3.856	3.847	0.025	0.876

Note: + express p value < 0.1; * express p value < 0.05; ** express p value < 0.01; *** express p value < 0.001

4.3.2 The ANOVA of the Age Variable

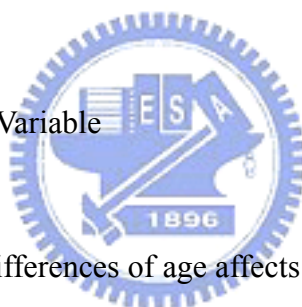


Table 4.10 explains the differences of age affects the differences of means among Internet using motivations and consumer characteristic. There are 7 segments of consumers' age in the Internet questionnaire. But because of the subjects of age under 14 years, 31~35 years, 36~40 years, and over 40 years are too few, this study combines the subjects of under 14 years and 15~20 years to be a new segment which is under 20 years and combines the subjects of 31~35 years, 36~40 years, and over 40 years to be a new segment which is over 30 years. Therefore, this study uses the 4 segments to proceed to analyze.

According to Table 4.10, this study finds some interesting findings. There are significant differences in consumers' social escapism motivation, socialize motivation, and economic motivation among the 4 segments of age. The formula $\mu_1, \mu_2, \mu_3 > \mu_4$

means μ_1, μ_2, μ_3 are significantly higher than μ_4 . But the μ_1, μ_2, μ_3 are not significantly higher than each other. Therefore this study finds the consumers are under 30 years, their social escapism motivations and socialize motivations are higher.

The same analysis method of multiple comparison the formula $\mu_3 > \mu_1, \mu_2, \mu_4$ means that μ_3 is significantly higher than μ_1, μ_2, μ_4 . Therefore the consumers between 26~30 years have the highest economic motivation than other segments.

Table 4.10 The ANOVA of the Age Variable.

Variables	Factor Name	Age				F Value	P Value	Multiple Comparison LSD
		μ_1 Under 20 years (n=63)	μ_2 21~25 years (n=247)	μ_3 26~30 years (n=82)	μ_4 Over 30 years (n=40)			
Internet Using Motivations	Social Escapism	3.226	3.209	3.143	2.819	4.625	0.003**	$\mu_1, \mu_2, \mu_3 > \mu_4$
	Transaction Security	3.698	3.789	3.683	3.883	1.219	0.302	
	Information	4.238	4.233	4.229	4.190	0.093	0.964	
	Control	4.152	4.248	4.220	4.110	1.326	0.265	
	Socialize	3.741	3.721	3.671	3.233	7.658	0.000***	$\mu_1, \mu_2, \mu_3 > \mu_4$
	Economic	3.675	3.711	3.851	3.819	2.101	0.099 ⁺	$\mu_3 > \mu_1, \mu_2, \mu_4$
Consumer Characteristic	Price Sensitivity	4.026	3.962	4.053	3.867	0.756	0.519	
	Brand Comparison	3.806	3.841	3.724	3.825	0.655	0.580	

Note: + express p value < 0.1; * express p value < 0.05; ** express p value < 0.01; *** express p value < 0.001

4.3.3 The ANOVA of Educational Level Variable

Table 4.11 explains the differences of educational level affects the differences of means among Internet using motivations and consumer characteristic. According to Table 4.11, this study finds there are significant differences in consumers' socialize motivation, and economic motivation among the 3 segments of educational level. The formula $\mu_2, \mu_3 > \mu_1$ means that μ_2 is significantly higher than μ_1 . But the μ_2 is not significantly higher than μ_3 , and μ_3 is not significantly higher than μ_1 . The same analysis method of the formula $\mu_2, \mu_3 > \mu_1$, therefore this study finds that the consumers' educational level which is university have the highest socialize motivation, and the high educational level includes university and graduate school have the highest economic motivation.

Table 4.11 The ANOVA of Educational Level Variable.

Variables	Factor Name	Educational Level			F Value	P Value	Multiple Comparison LSD
		μ_1 (n=6) Senior High School	μ_2 University (n=248)	μ_3 Graduate School (n=178)			
Internet Using Motivations	Social Escapism	2.833	3.182	3.146	0.974	0.378	
	Transaction Security	3.833	3.741	3.796	0.409	0.665	
	Information	3.833	4.234	4.236	1.906	0.150	
	Control	4.100	4.217	4.218	0.169	0.845	
	Socialize	3.167	3.688	3.659	2.087	0.125	$\mu_2, \mu_3 > \mu_1$
	Economic	3.292	3.730	3.774	2.607	0.075 ⁺	$\mu_2, \mu_3 > \mu_1$
Consumer Characteristic	Price Sensitivity	4.056	4.030	3.908	1.529	0.218	
	Brand Comparison	3.542	3.870	3.833	1.156	0.316	

Note: + express p value < 0.1; * express p value < 0.05; ** express p value < 0.01; *** express p value < 0.001

4.3.4 The ANOVA of Occupation Variable

Table 4.12 explains the differences of occupation affects the differences of means among Internet using motivations and consumer characteristic. There are 10 kinds of occupation in the Internet questionnaire, but there are no subjects belong to housewife and retirement. Therefore this study uses remained eight occupations to analyze.

According to Table 4.12, this study finds some interesting findings. First, there is a significant difference in consumers' social escapism motivation when the occupations are different. The formula (4.1) in Table 4.12 means that in social escapism motivation, the μ_7 is significantly higher than μ_4, μ_2 , and μ_3 . The μ_1 is significantly higher than μ_4, μ_2 , and μ_3 . But the group of $\mu_7, \mu_1, \mu_5, \mu_6$, group of $\mu_1, \mu_5, \mu_6, \mu_8$, and group of $\mu_5, \mu_6, \mu_8, \mu_4, \mu_2, \mu_3$ are not significantly higher than each others. According to the result of formula 4.1, this study finds the interesting finding consumers who are seeking job their social escapism motivation are the highest than the others. And the students, finance service, and SOHO are the second high group. The final group is general service industry, soldiers, public servants, teachers, and high technology staffs. This study can explain because of their jobs could train them with high resist compressive ability, they won't have social escapism motivation than other occupations.

The same as above analysis method of multiple comparisons for formula 4.2, 4.3, 4.4, and 4.5, this study would not explain each formula particularly. This study simply explains the meanings of significant the results of multiple comparisons, and picks up the significant groups of occupations to bring up relative statements and explanations.

According to the formula 4.2 in the control motivation, the group of soldiers, public servants, teachers (μ_2) is significantly higher than the groups of students (μ_1) and general service industry (μ_4). Because of the group of soldiers, public servants,

teachers (μ_2) works in the stable life and likes the feeling of stable. They want everything is in control so that their control motivations will be higher than others.

According to the formula 4.3 in socialize motivation, the group of finance service industry (μ_5) is significantly higher than the group of general service industry (μ_4). The formula 4.4 in economic motivation, the group of high technology staffs (μ_3) is significant higher than the group of other occupations (μ_8). Finally, according to the formula 4.5 in brand comparison inclination of consumer characteristic, the groups of students (μ_1) and high technology staffs (μ_3) are significant higher than group of other occupations (μ_8).



Table 4.12 The ANOVA of Occupation Variable.

Variables	Factor Name	Occupation								F Value	P Value	Multiple Comparisons LSD
		μ_1 n=229	μ_2 n=11	μ_3 n=40	μ_4 n=55	μ_5 n=6	μ_6 n=4	μ_7 n=7	μ_8 n=10			
Internet Using Motivations	Social Escapism	3.214	2.795	2.950	3.105	3.208	3.063	3.643	2.875	2.410	0.020*	$\mu_7, \mu_1 > \mu_5, \mu_6, \mu_8, \mu_4, \mu_2, \mu_3$ (4.1)
	Transaction Security	3.741	3.848	3.717	3.812	4.111	4.333	3.619	3.967	1.026	0.412	
	Information	4.221	4.382	4.310	4.160	4.300	4.300	4.457	4.120	0.754	0.626	
	Control	4.190	4.564	4.235	4.182	4.600	4.350	4.457	4.260	1.801	0.085 ⁺	$\mu_2, \mu_5 > \mu_7, \mu_6, \mu_8, \mu_3, \mu_1, \mu_4$ (4.2)
	Socialize	3.730	3.667	3.408	3.509	4.167	3.500	3.476	3.667	2.669	0.010**	$\mu_5, \mu_1, \mu_2, \mu_6, \mu_8 > \mu_7, \mu_3, \mu_4$ (4.3)
Economic	3.705	3.864	3.969	3.814	3.750	3.687	3.714	3.450	1.982	0.056 ⁺	$\mu_3, \mu_4 > \mu_2, \mu_5, \mu_7, \mu_6, \mu_1, \mu_8$ (4.4)	
Consumer Characteristic	Price Sensitivity	3.955	4.303	3.933	4.036	4.000	4.250	4.190	3.967	0.609	0.748	
	Brand Comparison	3.856	3.682	3.950	3.841	4.000	3.875	3.714	3.500	1.015	0.420	$\mu_1, \mu_3 > \mu_2, \mu_4, \mu_5, \mu_6, \mu_7, \mu_8$ (4.5)

Note: μ_1 : students, μ_2 : soldiers, public servants, teachers, μ_3 : high technology staffs, μ_4 : general service industry, μ_5 : finance service industry,

μ_6 : SOHO, μ_7 : seeking job, μ_8 : others, + express p value < 0.1; * express p value < 0.05; ** express p value < 0.01; *** express p value < 0.001

4.4 Correlation Analysis

According to the previous the result of reliability and validity analysis, this study uses the weighted average method to measure each score of motivations, consumer characteristic, and purchasing intention. This study uses the weighted average scores as a base to do a correlation analysis. The mean, standard deviation, and the correlation matrix of independent and dependent variables are listed in Table 4.12.

According to the results of Table 4.12, the variable of purchasing intention is significantly positive relation with price sensitivity ($r = .117$), brand comparison inclination ($r = .152$), information motivation ($r = .255$), control motivation ($r = .106$), and economic motivation ($r = .3$). But the variable of purchasing intention is significantly negative relation with the transaction-based security and privacy concerns ($r = -.314$). In the correlation matrix, only the social escapism motivation and social motivation are not significant relation with variable of purchasing intention. This differed to previous hypothesis H_{3-1} and H_{3-5} in this study. This study will further proceed to analyze with regression model, and explore their relations in next Section 4.5.

Before constructing the regression model, this study finds the pair of independent variables which their correlation coefficient γ values are significant different from 0. These independent variables price sensitivity, brand comparison inclination, social escapism motivation, transaction-based security and privacy concerns, information motivation, control motivation, socialize motivation and economic motivation in correlation matrix are correlated and may occur multicollinearity problem in regression model. Therefore, this study will use the stepwise regression to select explainable independent variables and avoid the multicollinearity problem in regression model.

Table 4.13 The Mean, Standard Deviation, and Correlation Matrix of Independent and Dependent Variables.

	Mean	Std. Deviation	1 Purchasing Intention	2 Price Sensitivity	3 Brand Comparison	4 Social Escapism	5 Transaction Security	6 Information	7 Control	8 Socialize	9 Economic
1	3.298	0.957	-								
2	3.98	0.715	.117*	-							
3	3.850	0.559	.152**	.399**	-						
4	3.162	0.640	.016	.100*	.050	-					
5	3.765	0.649	-.314**	.112*	.048	.134**	-				
6	4.230	0.501	.255**	.369**	.407**	.246**	.135**	-			
7	4.216	0.490	.106*	.340**	.222**	.169**	.259**	.545**	-		
8	3.669	0.625	-.024	.149*	.136**	.394**	.113*	.339**	.331**	-	
9	3.742	0.526	.300**	.333**	.278**	.265**	.043	.492**	.342**	.263**	-

Note: * express p value < 0.05; ** express p value < 0.01; *** express p value <0.001

4.5 Regression Analysis

This study uses the multiple regression analysis to test the previous hypotheses which are listed in Table 2.1 in Section 2.3.4. And the multiple regression model includes the demographic variables, consumer characteristic, Internet using motivations, and the interaction between consumer characteristic and Internet using motivations. The formula of regression model will be expressed in formula (2) in Section 3.5.5.

Before proceeding to the regression analysis, this study proceeds to the residual analysis to examine whether residuals are normal distribution or not. According to the figures and table of Appendix 3, the residual of model is approximately standard normal distribution.



4.5.1 Stepwise Regression

Because of after correlation analysis, this study finds there are high relations among independent variables. In order to avoid the multicollinearity problem, this study uses the forward selection stepwise regression to choose the independent variables which are more explainable to dependent variable. After forward selection stepwise regression, the best model consists of nine independent variables which are transaction-based security and privacy concerns, economic motivation, information motivation, gender, social motivation, interaction between transaction-based security and privacy concerns and brand comparison inclination, transaction-based security and privacy concerns and price sensitivity, age, and personal disposable income.

According to the results of stepwise regression model in Table 4.14, the difference of gender is significantly positive ($\beta = 0.134$, $p < 0.01$). The result

supports the H₁₋₁. Because of the gender variable is dummy variable which set the 0 stand for male and the 1 stand for female. Therefore, the female's purchasing intention is more than male in this study. The impact of age is significantly negative ($\beta = -0.149$, $p < 0.01$). It supports the H₁₋₂ younger people are expected to be more likely to shop online. In the aspect of personal disposable income, it is significantly positive ($\beta = 0.113$, $p < 0.05$). That means the consumers with more personal disposable income are with more purchasing intention which supports H₁₋₄.

In the Internet using motivations, information motivation ($\beta = 0.181$, $p < 0.001$), and economic motivation ($\beta = 0.280$, $p < 0.001$) are significantly positive. But the transaction-based security and privacy concerns ($\beta = -0.344$, $p < 0.001$) and socialize motivation ($\beta = -0.126$, $p < 0.01$) are significantly negative. The result of transaction-based security and privacy concerns supports H₃₋₂, but the socialize motivation against H₃₋₅ which is positively related to purchasing intention.



Table 4.14 Stepwise Regression Model

Independent Variable	Dependent Variable		Purchasing Intention	
	β	P Value		
Gender	.134	.002**		
Age	-.149	.003**		
Disposable Income	.113	.023*		
Transaction-based Security and Privacy Concerns	-.344	.000***		
Information Motivation	.181	.000***		
Socialize Motivation	-.126	.006**		
Economic Motivation	.280	.000***		
Price Sensitivity x TP	.107	.022*		
Brand Comparison Inclination x TP	-.136	.004**		
R Square			.289	
Adjusted R Square			.274	
F Value			18.999	
Overall Significance			.000***	

Note: * express p value < 0.05; ** express p value < 0.01; *** express p value < 0.001

4.5.2 The Interactions in Stepwise Regression Model

In the interaction variables, only two hypotheses (H₄₋₂, H₄₋₈) are significantly ($p < 0.05$). This study will introduce and explain these interactions with a figure separately. The first significant interaction is the interaction between price sensitivity and transaction-based security and privacy concerns. According to the result of stepwise regression model in Table 4.14, the coefficient of transaction-based security and privacy concerns β_1 is -0.344, and the coefficient of interaction between price sensitivity and transaction-based security and privacy concerns β_3 is 0.107. The multiple regression formula 4.6 is shown as follows:

$$\hat{Y} = -0.344X_1 + \beta_2 X_2 + 0.107X_1X_2 \quad (4.6)$$

\hat{Y} is predicted purchasing intention

X_1 is transaction-based security and privacy concerns

X_2 is price sensitivity

X_1X_2 is interaction between price sensitivity and transaction-based security and privacy concerns

According to interaction analysis method (Schoonhoven, 1981), when β_1 and β_3 are different signs (+, - or -, +), the interaction of X_1X_2 is un-monotonous interaction which means interaction effect will follow the difference of X_2 and the increase of X_1 to lead to \hat{Y} produce the different results. One is redoubled increase, the other is redoubled decrease. The figure is like trumpet shape. On the contrary, if β_1 and β_3 are the same sign (+, + or -, -), the interaction of X_1X_2 is monotonous interaction which means interaction effect will follow the difference of X_2 and the increase of X_1 to lead to \hat{Y} produce the same result. The result is either redoubled increase or redoubled decrease.

According to the method and the regression formula above, the interaction between price sensitivity and transaction-based security and privacy concerns is un-monotonous interaction. Because of the variable of price sensitivity is not significant to purchasing intention singly, but the Figure 4.1 clearly explains the interaction when consumers' transaction-based security and privacy concerns are stronger, the consumers with high price sensitivity are with higher purchasing intention but if consumers with low price sensitivity, they are with lower purchasing intention.

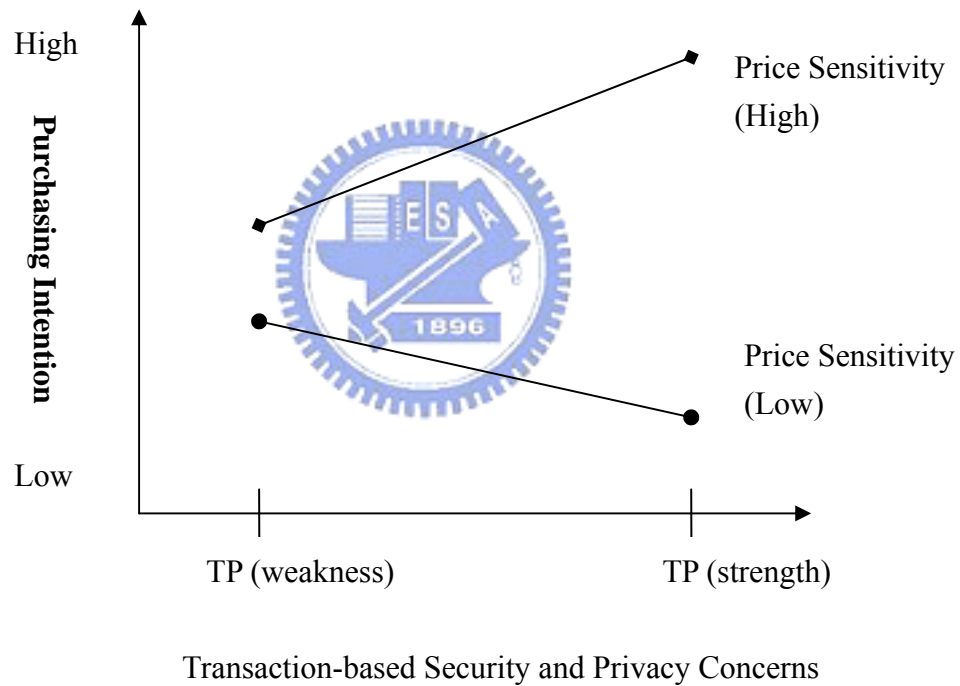


Figure 4.1 Interaction of Price Sensitivity and TP

The second significant interaction is the interaction between brand comparison inclination and transaction-based security and privacy concerns. According to the result of stepwise regression model in Table 4.14, the coefficient of transaction-based security and privacy concerns β_1 is -0.344, and the coefficient of interaction between brand comparison inclination and transaction-based security and privacy concerns β_3 is -0.136. The multiple regression formula 4.7 is shown as follows:

$$\hat{Y} = -0.344X_1 + \beta_2X_2 - 0.136X_1X_2 \quad (4.7)$$

\hat{Y} is predicted purchasing intention

X_1 is transaction-based security and privacy concerns

X_2 is brand comparison inclination

X_1X_2 is interaction between brand comparison inclination and transaction-based security and privacy concerns

According to interaction analysis method (Schoonhoven, 1981), β_1 and β_3 are the same sign (+, + or -, -), the interaction of X_1X_2 is monotonous interaction. Therefore, the interaction between brand comparison inclination and transaction-based security and privacy concerns is monotonous interaction. According to the Figure 4.2, when consumers' transaction-based security and privacy concerns are stronger, the consumers with high brand comparison inclination are with lower purchasing intention; however if consumers with low brand comparison inclination, they are with lower purchasing intention.

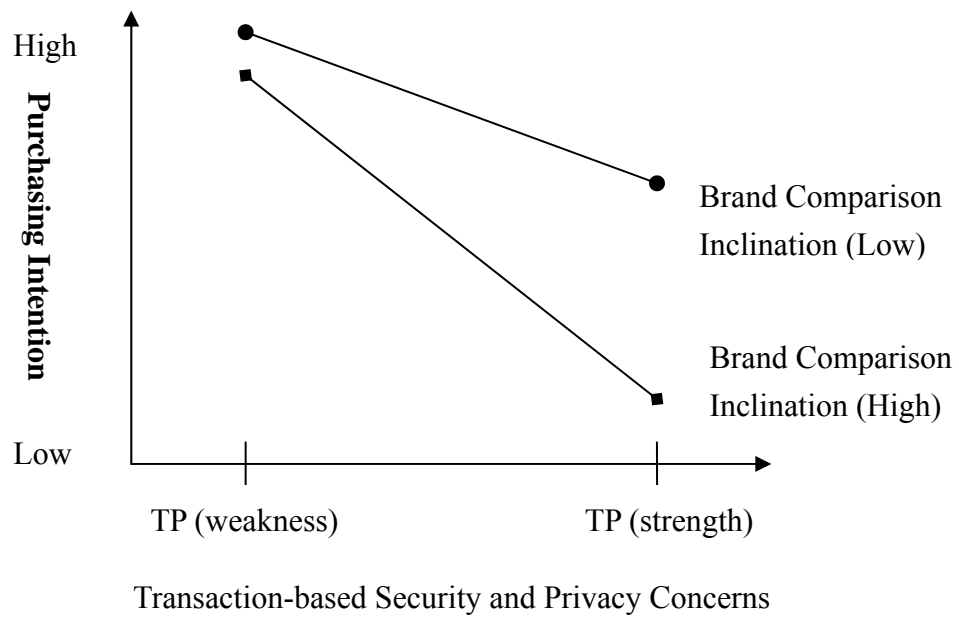


Figure 4. 2 Interaction of Brand Comparison Inclination and TP



CHAPTER 5 Discussions and Conclusions

This study mainly explores the effects of consumer characteristic and the Internet using motivation on the purchasing intention of online shopping. According to the results of stepwise regression model in Section 4.5.1, this study first lists all the results of hypotheses in Table 5.1, and explains all the results of hypotheses later. In Section 5.2, this study will discuss the research results of academic and practical meanings, and then list what are the research limits in this study in Section 5.3. Finally, this study will suggest what could further research in the future in Section 5.4.

5.1 The Summary of Results of Hypotheses

There are totally 24 hypotheses in this study, 9 of them that include H_{1-1} , H_{1-2} , H_{1-4} , H_{3-2} , H_{3-3} , H_{3-5} , H_{3-6} , H_{4-2} , H_{4-8} are supported, the others are not. The detailed statements and test results of hypotheses are listed in Table 5.1. This study will discuss these test results according to their category of variables one by one.

5.1.1 The Category of Demographics of Hypotheses

According to Table 4.14 in section 4.5, this study finds the H_{1-1} , H_{1-2} , H_{1-4} are supported. There are some interesting findings that the female are more likely shopping online than male, the younger consumers are more likely shopping online, and the consumers with more personal disposable income are with more purchasing intention. But in educational level, past literature supported the higher education will be higher online shopping. Because of this study used the convenience samplings, the samples almost have degrees of university. Therefore, this study could not to test the

significant difference of H_{1-3} . This part will be listed in research limits in Section 5.3.

5.1.2 The Category of Internet Using Motivations

According to the results of stepwise regression analysis, the social escapism motivation and control motivation are not significant, but others are significant. In the significant motivations, the transaction-based security and privacy concerns is the most effect to consumers' purchasing intentions which are negatively relation. In other words, the consumers' transaction-based security and privacy concerns are higher, the purchasing intentions online are lower. The information motivation and economic motivation are positively and significantly related to consumers' purchasing intentions.

The significant motivation but different relation with original hypothesis is the socialize motivation. In the results of this study, the socialize motivation is negatively related to consumers' purchasing intentions. This study infers that the Internet users though the Internet is a tool to connect with friends and relations. However, to shopping online is not a point to them. They spent most time to chat and connect, not to shop online.

5.1.4 The Category of Interactions of Hypotheses

According to the results of stepwise regression model, Figure 4.1, and Figure 4.2, this study finds two interactions between Internet using motivations and consumer characteristic. The first interesting finding is that when consumers' transaction-based security and privacy concerns are stronger, the consumers with high price sensitivity are with higher purchasing intention, but if consumers with low price sensitivity, they

are with lower purchasing intention. The second interesting findings is that when consumers' transaction-based security and privacy concerns are stronger, the consumers with high brand comparison inclination are with lower purchasing intention; however if consumers with low brand comparison inclination, they are with lower purchasing intention.

Table 5.1 Summary of Results of Hypotheses by Regression Analysis.

Variables	Hypotheses	Test Result
Demographics	H₁₋₁ : Males are expected to be more likely to shop online than females.	Not support Females' PI > Males' PI
	H₁₋₂ : Younger people are expected to be more likely to purchasing intention.	Support
	H₁₋₃ : Purchasing intention will be positively related to education.	Not Support
	H₁₋₄ : Purchasing intention will be positively related to income.	Support
Consumer Characteristic	H₂₋₁ : Consumers' price sensitivity will be positively related to purchasing intention.	Not Support
	H₂₋₂ : Consumers' brand comparison inclination will be positively related to purchasing intention.	Not Support
Internet Using Motivations	H₃₋₁ : Purchasing intention will be positively related to social escapism motivation.	Not Support
	H₃₋₂ : Purchasing intention will be negatively related to transaction-based security and privacy concerns.	Support
	H₃₋₃ : Purchasing intention will be positively related to information motivation.	Support
	H₃₋₄ : Purchasing intention will be positively related to control motivation.	Not Support
	H₃₋₅ : Purchasing intention will be positively related to socialization motivation.	Not support Negatively Relation
	H₃₋₆ : Purchasing intention will be positively related to economic motivation.	Support

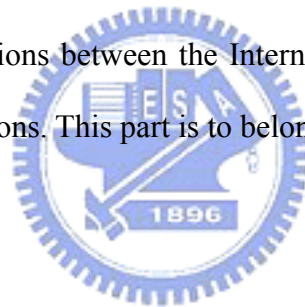
Interaction between Consumer Characteristic and Internet Using Motivations		Test Result
Price Sensitivity * Motivations	H_{4.1}: Purchasing intention will be positively related to the interactive effect of the social escapism motivation and price sensitivity.	Not Support
	H_{4.2}: Purchasing intention will be positively related to the interactive effect of the transaction-based security and privacy concerns and price sensitivity.	Support
	H_{4.3}: Purchasing intention will be positively related to the interactive effect of the information motivation and price sensitivity.	Not Support
	H_{4.4}: Purchasing intention will be positively related to the interactive effect of the control motivation and price sensitivity.	Not Support
	H_{4.5}: Purchasing intention will be positively related to the interactive effect of the socialization motivation and price sensitivity.	Support
	H_{4.6}: Purchasing intention will be positively related to the interactive effect of the economic motivation and price sensitivity.	Not Support
Brand Comparison Inclination * Motivations	H_{4.7}: Purchasing intention will be positively related to the interactive effect of the social escapism motivation and brand comparison inclination.	Not Support
	H_{4.8}: Purchasing intention will be negatively related to the interactive effect of the transaction-based security and privacy concerns and brand comparison inclination.	Support
	H_{4.9}: Purchasing intention will be positively related to the interactive effect of the information motivation and brand comparison inclination.	Not Support
	H_{4.10}: Purchasing intention will be positively related to the interactive effect of the control motivation and brand comparison inclination.	Not Support
	H_{4.11}: Purchasing intention will be positively related to the interactive effect of the socialization motivation and brand comparison inclination.	Not Support
	H_{4.12}: Purchasing intention will be positively related to the interactive effect of the economic motivation and brand comparison inclination.	Not Support

5.2 Conclusion

This section consists of two parts. The first section explains the academic meanings of this thesis in section 5.2.1. The second section is about practical meanings of this thesis in section 5.2.2. This section brings up some points about how to enhance consumers' online shopping behaviors in electronic commerce.

5.2.1 Academic Meanings

Because of the past literature almost explored the single category of variables related to online shopping, this study used the consumer characteristic as a moderator variable to explore their relations between the Internet using motivations and online consumers' purchasing intentions. This part is to belong to an explored research.



5.2.1 Practical Meanings

This study can use the demographics variables to segment the online shopping market. Because of the results in this study, the demographics variables gender, age, and disposable income are related to purchasing intention. Therefore, three-dimensional space plot Figure 5.1 could be drawn, and focus the target market to design a special Website for younger female with more high disposable income. The Website could sell the clothing, accessory, cosmetic and relative books which are the highest three popular categories in this study.

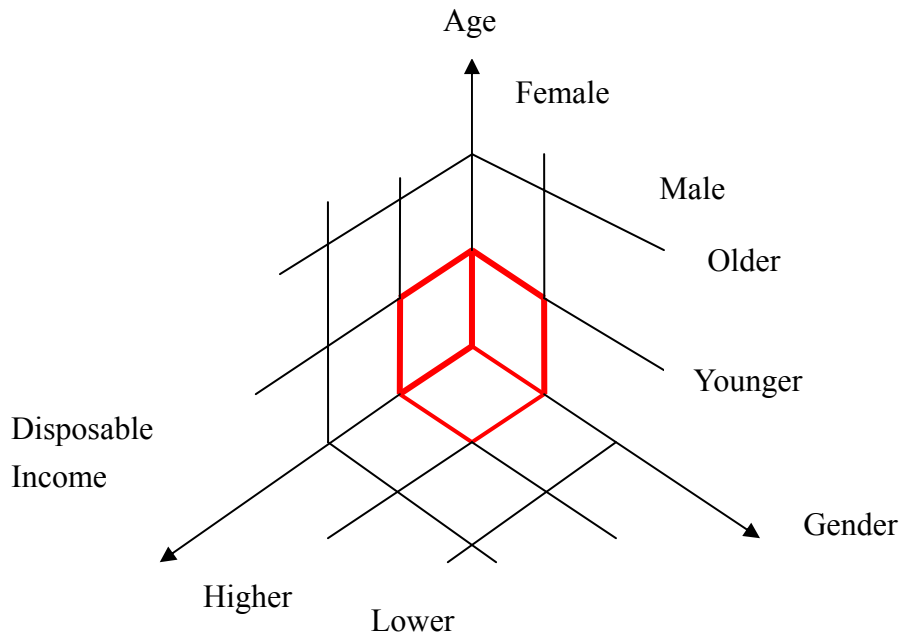


Figure 5.1 Online Customer Segment

To realize the users' Internet using motivations, it could provide the corporation construct their online shopping Website, and to know what are consumers' needs and concerns. It could help corporation plan good advertisements, marketing activities, and exploit the potential customers.

According to results of this study, the transaction-based security and privacy concerns and economic motivation are the first two important motivations to consumers. Therefore, in the aspect of transaction-based security and privacy concerns, because of consumers must fill our personal information so that entering the Website to shop. The Website can set a special region for guest to use, let first entering users can search relate information which they want. And Website can display that we absolutely protect the personal information. In the Internet transactions, the ways of paying money usually included payment by credit card and inward remittance. Therefore, how to construct a safe transaction mechanism is very important. To be aimed at the consumers with higher transaction-based security and privacy concerns, the corporation could provide a way to pay money on receipt of the

goods.

In economic motivation, consumers will select to shop online because of they want to save time and money. Therefore, how to let consumers ensure that shopping online is more convenient and easily to save money and time than traditional retail environment is critical.

According to the result of interaction between transaction-based security and privacy concerns and price sensitivity, the corporation can use the result to raise the consumers' online purchasing intentions. Except for construct a safe the transactions mechanism, the Website could provide the mass price information to consumers who have high price sensitivity. That way will enhance the consumers' online purchasing intentions.

According to result of interaction between transaction-based security and privacy concerns and brand comparison inclination, this study finds that the group of consumers with higher transaction-based security and privacy concerns and higher brand comparison inclination had very low purchasing intentions online. They didn't believe that the transaction online is safe and because of they with higher perceptions of brand, they preferred famous and well-know brand. They are afraid that they will buy the fake well-know brand online, because of above reason they had very low purchasing intention online. That means this group is a potential customer group. How to reduce their risk of buying online is critical. Therefore, in order to enhance consumers' belief, the Website could provide to cash on delivery and relative guarantee.

5.3 Research Limits

Due to this study used the network questionnaire to survey which is convenience samplings, and used the Bulletin Broad System and E-mail to publicize the Website, the demographic structure of subjects is most students. Therefore, the distribution of samples can not stand for the populations, the generalize ability in this study is not good.

5.4 Research Direction in the Future


This study only explored the consumers' online purchasing intention, not to focus on the particular merchandise or service Website like network bookstore, mobile communication store, and electronic auction Website...etc. Therefore, in the future the research could select single particular Website to proceed further to analysis and explore in depth.

Expect for the consumer characteristic and Internet using motivations, there are many variables will affect the consumers' online buying like consumer characteristic which included other properties like product function, service after selling, and product original nation. The research in the future can consider adding these variables to explore the effect on consumers' purchasing intentions.

This study explored the relations between demographic variables and Internet using motivations in section 4.3. This field is very interesting to research further. Because of the subjects in this study are almost students, the results not had generalize ability. Therefore, if the research in the future can obtain samples which are more generalize abilities, it could find that the relations of demographic variables and Internet using motivation more accurate.

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Appendix 1 Questionnaire Context

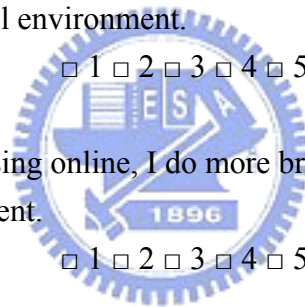
The first part: consumer online shopping behavior and experience

1. How long is your experience of surfing online : under 1 year 1~3 years 3~5 years 5~7 years over 7 years
2. How much time do you spend on surfing online?
 under 30 minutes 30~60 minutes 1~2 hours 2~3 hours over 3 hours
3. The probability that you would consider purchasing the product is
Strongly Disagree 1 2 3 4 5 Strongly Agree
4. Your willingness to purchasing the product is
Strongly Disagree 1 2 3 4 5 Strongly Agree
5. The probability that you would consider repurchasing the product is
Strongly Disagree 1 2 3 4 5 Strongly Agree
6. Your willingness to repurchase the product is
Strongly Disagree 1 2 3 4 5 Strongly Agree
7. In past 6 months, how many were you shopping online?
 0 time 1 time 2~3 times 4~5 times over 6 times
8. In past 6 months, how much were you shopping online?
 under NT 1,000 dollars NT 1,001~2,000 dollars NT 2,001~3,000 dollars
 NT 3,000~4,000 dollars NT 4,000~5,000 dollars over NT 5,000 dollars
9. Which categories of products or services are you shopping online? (multiple choices):
 Books Computers (software and hardware) Tickets for airlines/railway/ship, etc Records/CDs/music News Flower Goods Cosmetic Clothing and accessory Stock exchange (online exchange) Travel, rent cars, order the room others

The second part: the consumers' perceptions of consumer characteristic

1. When considering purchase online, I actively evaluate a large number of brands then when I shop in a traditional retail environment.
Strongly Disagree 1 2 3 4 5 Strongly Agree
2. When considering purchase online, I tend to tradeoff the strengths and weaknesses of brand before deciding how attractive the brand is.
Strongly Disagree 1 2 3 4 5 Strongly Agree

3. When considering purchase online, compared to traditional retail environment, I find it easier to identify and eliminate brands which are clearly inferior to others.
Strongly Disagree 1 2 3 4 5 Strongly Agree
4. When considering purchase online, I do an overall comparison of different brands before I decide which brand is my most preferred.
Strongly Disagree 1 2 3 4 5 Strongly Agree
5. When considering purchase online, I prefer to buy well-known brands.
Strongly Disagree 1 2 3 4 5 Strongly Agree
6. When considering purchase online, I am more price sensitive compared to that in a traditional retail environment.
Strongly Disagree 1 2 3 4 5 Strongly Agree
7. When considering purchasing online, I react more to sales promotions compared to that in a traditional retail environment.
Strongly Disagree 1 2 3 4 5 Strongly Agree
8. When considering purchasing online, I do more brand price comparisons than in a traditional retail environment.
Strongly Disagree 1 2 3 4 5 Strongly Agree



The third part: the reasons for consumers to use Internet

1. Buying online lacks the feel of security.
Strongly Disagree 1 2 3 4 5 Strongly Agree
2. Surfing on Internet can let me forget the reality.
Strongly Disagree 1 2 3 4 5 Strongly Agree
3. I can decide whether open the Website.
Strongly Disagree 1 2 3 4 5 Strongly Agree
4. I can know the most new information on the Internet.
Strongly Disagree 1 2 3 4 5 Strongly Agree

5. Surfing on Internet has become one part of my life.
Strongly Disagree 1 2 3 4 5 Strongly Agree
6. I can search the useful information on the Internet.
Strongly Disagree 1 2 3 4 5 Strongly Agree
7. Shopping online can saving the cost of traffic. .
Strongly Disagree 1 2 3 4 5 Strongly Agree
8. I can expand my interpersonal relationship online.
Strongly Disagree 1 2 3 4 5 Strongly Agree
9. I can't expect the product completeness when buying online.
Strongly Disagree 1 2 3 4 5 Strongly Agree
10. Surfing on Internet can let me skip the trouble, temporarily not think the trouble.
Strongly Disagree 1 2 3 4 5 Strongly Agree
11. I can use Internet to save some money. (eg. Print the coupon.)
Strongly Disagree 1 2 3 4 5 Strongly Agree
12. Surfing on Internet can let me feel good, relax my mood.
Strongly Disagree 1 2 3 4 5 Strongly Agree
13. Shopping on Internet can save time and feel convenient.
Strongly Disagree 1 2 3 4 5 Strongly Agree
14. According to personal like order the personal e-paper.
Strongly Disagree 1 2 3 4 5 Strongly Agree
15. Internet can help me to obtain some cheap or free information.
Strongly Disagree 1 2 3 4 5 Strongly Agree
16. I can use Internet to compare the product of price difference, and to find the cheapest price.
Strongly Disagree 1 2 3 4 5 Strongly Agree

17. I think using the credit card to deal online is lack of security.
Strongly Disagree 1 2 3 4 5 Strongly Agree
18. Surfing on Internet can let me not feel lonely.
Strongly Disagree 1 2 3 4 5 Strongly Agree
19. I can learn knowledge of varied fields on the Internet.
Strongly Disagree 1 2 3 4 5 Strongly Agree
20. I can design personal homepage and using interface.
Strongly Disagree 1 2 3 4 5 Strongly Agree
21. I can use the Internet to deal in stock, and save the procedure fee.
Strongly Disagree 1 2 3 4 5 Strongly Agree
22. I can use the Internet to contact with my family or friends.
Strongly Disagree 1 2 3 4 5 Strongly Agree
23. Internet can help me to obtain mass of information easily and quickly.
Strongly Disagree 1 2 3 4 5 Strongly Agree
24. I like to buy online because there is no pressure from salespersons.
Strongly Disagree 1 2 3 4 5 Strongly Agree
25. I think when I fill out my personal information online, it would possible be disclosed.
Strongly Disagree 1 2 3 4 5 Strongly Agree
26. I will date friends to surf on Internet.
Strongly Disagree 1 2 3 4 5 Strongly Agree
27. The goodwill of the online shop is a major concern for me when buying online.
Strongly Disagree 1 2 3 4 5 Strongly Agree
28. I can decide whether continue surfing the Website.
Strongly Disagree 1 2 3 4 5 Strongly Agree

29. I often talk the information of the webs to friends.
Strongly Disagree 1 2 3 4 5 Strongly Agree

30. I can decide when to surf on Internet and what to view.
Strongly Disagree 1 2 3 4 5 Strongly Agree

The fourth part: basic information of respondents

1. Gender : Male Female
2. Age : under 14 years 15-20 years 21-25 years 26-30 years 31-35 years
 36-40 years over 41 years
3. Educational level : under junior high school senior high school university
 graduate school
4. Occupation : students soldiers, public servants, teachers high technology
staffs
 general service industry finance service SOHO housewife
 seeking job retirement others
5. How much is your average income a month:
 under NT 15,000 dollars NT 15,001~30,000 dollars NT 30,001~45,000
dollars NT 45,001~60,000 dollars NT 60,001~75,000 dollars NT
75,001~90,000 dollars over NT90,001 dollars
6. How much is your average disposable income a month:
 under NT 5,000 dollars NT 5,001~10,000 dollars NT 10,001~20,00 dollars
 NT 20,001~30,000 dollars NT 30,001~40,000 dollars NT 4,001~50,000
dollars NT 50,001~60,000 dollars NT 60,001~70,000 dollars over
NT70,001 dollars

Appendix 2 Network Questionnaire

問卷調查 - PCMan 2004 Combo

連線 (C) 編輯 (E) 選項 (Y) BBS最愛 (B) Web最愛 (A) 紀錄 (Y) ANSI編輯 (N) 工具 (I) 說明 (H)

http://140.113.59.167:8080/index.htm

1.問卷調查

各位親愛的網路使用者您好：

這是一份學術問卷，目的在探究網路者使用動機、產品特性及網路購買行為之間的關係，您所填寫的一切資料，將不會外流，僅供本研究使用，請放心填寫。本問卷內容共分為四部份，請您務必完整作答，謝謝您的作答，祝您順心、愉快！

國立交通大學 管理科學研究所碩士班
指導教授 張力元 教授 張家齊 教授
碩士班研究生 陳建中 敬上

填寫期限：2005年02月16日 00時00分～2005年03月09日 23時59分 為止

第一部份：消費者線上購物行為與經驗

1. 您的上網經驗約：

1年以下 1~3年 3~5年 5~7年 7年以上

2. 您每天大約花多少時間瀏覽網站？

30分鐘以下 30~60分鐘 1~2小時 2~3小時 超過3小時

3. 請問您會考慮在網路上購物的可能性是：

完成

問卷調查 - PCMan 2004 Combo

連線 (C) 編輯 (E) 選項 (Y) BBS最愛 (B) Web最愛 (A) 紀錄 (Y) ANSI編輯 (N) 工具 (I) 說明 (H)

http://140.113.59.167:8080/index.htm

1.問卷調查

3. 請問您會考慮在網路上購物的可能性是：

非常低 低 普通 高 非常高

4. 請問您會在網路上購物的意願是：

非常低 低 普通 高 非常高

5. 請問您會考慮在網路上再次購物的可能性是：

非常低 低 普通 高 非常高

6. 請問您會在網路上再次購物的意願是：

非常低 低 普通 高 非常高

7. 過去六個月中，您在網路上購物的經驗為：

0次 1次 2~3次 4~5次 6次以上

8. 過去六個月中，您在網路上購物的金額為：

1000元以下 1001~2000元 2001~3000元 3001~4000元 4001~5000元 5000元以上

9. 請問最近，您購買商品、服務種類為(複選)：

書籍 電腦軟硬體 門票機票 CD/錄影帶 新聞、商業投資資訊 鮮花禮品 民生用品(包括化妝、保養品等)

服飾(包括手提包、配件等) 證券金融(包括網路下單等) 旅遊、租車、訂房 其他

完成

問卷調查 - PCMan 2004 Combo

連線 (C) 編輯 (E) 選項 (Y) BBS最愛 (B) Web最愛 (A) 紀錄 (Y) ANSI編輯 (N) 工具 (I) 說明 (H)

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1.問卷調查

第二部份：消費者對產品特性的知覺

	非常不同意	不同意	普通	同意	非常同意
1. 網路購物時，我會比在傳統購物環境下更主動評估更多的品牌。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. 網路購物時，我會在做決定前，考慮一個品牌的優缺點。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 網路購物時，我會比在傳統購物環境下更容易鑑別出較差的品類並且剔除它。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 網路購物時，我會比在作決策前，對不同的品類做全面的比較。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 網路購物時，我會比較偏好購買知名的品類。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 網路購物時，我會比在傳統購物環境下，對價格更敏感。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 網路購物時，我會比在傳統購物環境下，更愛做銷售促銷的比較。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 網路購物時，我會比在傳統購物環境下，更愛比較價錢。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

第三部份：消費者的網路使用動機

	非常不同意	不同意	普通	同意	非常同意
1. 上網購物的交易安全讓我缺乏安全感。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

完成

開始 MSN Messenger 網路問卷.doc - Micro... 問卷調查 - PCMan 2... CH 下午 01:23

問卷調查 - PCMan 2004 Combo

連線 (C) 編輯 (E) 選項 (Y) BBS最愛 (B) Web最愛 (A) 紀錄 (Y) ANSI編輯 (N) 工具 (I) 說明 (H)

http://140.113.59.167:8080/index.htm

1.問卷調查

2. 上網可以讓我忘記現實。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. 我可以決定是否要開啓所要瀏覽網站。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. 透過網路我可以知道一些最新的消息。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. 上網已變成我生活的一部份，每天的例行公事之一。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. 我可以在網路查詢到我想要的資料。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. 上網購物可以節省我在逛街往返的花費。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. 透過網路，可以擴展我的人際關係(例：網路交友)。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. 上網購物時，我無法預期所購買產品的完整性。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. 上網可以讓我跳脫煩人的事務。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. 上網列印折價卷，拍賣網站上的限時特價商品。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. 上網可以讓我放鬆心情。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. 我喜歡上網購物的便利與節省時間。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. 我可以依個人喜好訂閱電子報。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. 網路可以幫我獲取一些便宜甚至是免費的資料。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. 我可以利用網路去比較產品不同的價格，找出最便宜的價格。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. 我認為在網路上使用信用卡交易是缺乏安全性的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. 上網能讓我感到寂寞。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. 我可以透過網路學到很多東西。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. 我可以依個人喜好設定個人專屬的網頁和介面。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. 藉由股市網路下單，可有利於我在股票上投資的便利性和節省手續費。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. 透過網路可增加我與朋友聯絡聊天的機會。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

完成

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問卷調查 - PCMan 2004 Combo

連線 (C) 編輯 (E) 選項 (V) BBS最愛 (B) Web最愛 (A) 紀錄 (Y) ANSI編輯 (N) 工具 (I) 說明 (H)

http://140.113.59.167:8080/index.htm

1.問卷調查

23. 因為網路可以幫我快速與容易地取得大量資料。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. 上網購物可以讓我不會受到銷售人員所給予的壓力。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. 我擔心在網路上填寫個人資料，會造成個人資料洩漏的可能。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. 我可以和朋友相約一起上網。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. 上網購物時，網路商家的商譽是我所關心的。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. 我可以決定是否要繼續瀏覽網站。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. 我可以透過網路與朋友交流意見。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. 我可以決定上網的時間。	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

第四部份：個人基本資料

1. 性別： 男 女

2. 年齡： 14歲(含)以下 15-20歲 21-25歲 26-30歲 31-35歲 36-40歲 41歲以上

3. 教育程度： 國中(含以下) 高中、高職 大學、大專 研究所(含以上)

4. 職業： 學生 軍公教人員 高科技產業人員 一般工、商、服務業

金融業 自由業 家庭主婦 找尋工作中 退休或無業 其他

5. 請問您每個月平均工作收入約：

無 15000元以下 15001-30000元 30001-45000元 45001-60000元

60001-75000元 75001-90000元 90001以上

完成

開始 MSN Messenger 網路問卷.doc - Micro... 問卷調查 - PCMan 2... CH 下午 01:23

問卷調查 - PCMan 2004 Combo

連線 (C) 編輯 (E) 選項 (V) BBS最愛 (B) Web最愛 (A) 紀錄 (Y) ANSI編輯 (N) 工具 (I) 說明 (H)

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1.問卷調查

2. 年齡： 14歲(含)以下 15-20歲 21-25歲 26-30歲 31-35歲 36-40歲 41歲以上

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無 15000元以下 15001-30000元 30001-45000元 45001-60000元

60001-75000元 75001-90000元 90001以上

6. 請問您每個月可支配所得(包括零用錢)約：

5000元以下 5001-10000元 10001-20000元 20001-30000元 30001-40000元

40001-50000元 50001-60000元 60001-70000元 70001元以上

請填入您常用的 E-mail，以便抽獎作業，感謝您的參與!

e-mail:

填寫送出 清除重填

完成

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Appendix 3 Table and Figures of Residual Analysis

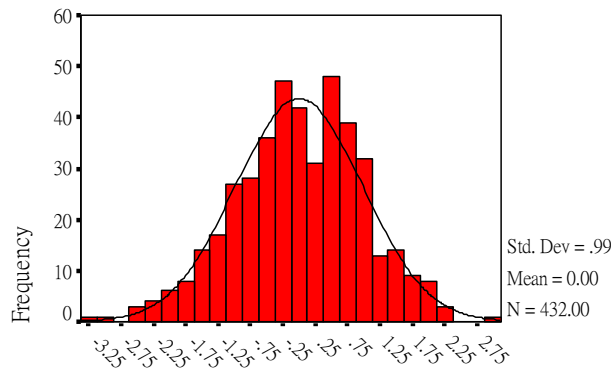
Residuals Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.9463	5.1502	3.2975	.50143	432
Residual	-2.6439	2.4209	.0000	.81554	432
Std. Predicted Value	-2.695	3.695	.000	1.000	432
Std. Residual	-3.197	2.927	.000	.986	432

Dependent Variable: API

Histogram

Dependent Variable: API



Regression Standardized Residual

Normal P-P Plot of Regression Stan

Dependent Variable: Zscore(API)

