

B2C INTERNET COMMERCE: A TALE OF TWO NATIONS

Achita (Mi) Muthitacharoen
The W. Frank Barton School of Business
Wichita State University
achita.muthita@wichita.edu

Prashant Palvia
The Bryan School of Business and Economics
The University of Northern Carolina at Greensboro
pcpalvia@uncg.edu

ABSTRACT

Much of the empirical information on E-Commerce activity is based on the U.S. and other developed nations. This study extends our knowledge by conducting a comparative investigation of B2C Internet shopping in the U.S. and Thailand. A unique feature of the study is the examination of Internet shopping in relation to conventional in-store shopping. Data was collected from both countries and statistical analyses were conducted to find differences among consumer preferences and behaviors toward Internet stores. A scale to measure consumer preference is proposed and its Cronbach's alpha is reported. The results demonstrate that American subjects have a higher acceptance of Internet stores than those who live in Thailand, proving that Internet commerce has not yet penetrated global markets. Based on the study, suggestions are offered on how to conduct electronic business in other parts of the world.

1. Introduction

The ability of the Internet to reach global markets has long been touted and recognized both by businesses and researchers (e.g. Swass, 1996, Kalakota and Whinston, 1996). Several initiatives have been undertaken by businesses with the goal to expand their consumer base into different countries. Some web-based initiatives include: incorporating different languages to reach global audiences, using culturally-appropriate colors in the web pages, allowing various payment methods and currencies acceptable in different countries, tailoring contents and visuals to the targeted audiences, etc. Despite continued efforts by business, worldwide business to consumer E-Commerce (B2C) outside of the U.S. is only 20% of the total market (Iyer et al. 2002). This activity in less-developed countries, e.g., in Asia, Latin America, and Africa is even much lower.

Consumer's acceptance of E-Commerce and Internet stores has been studied by researchers in various disciplines. Different theories, such as the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975; Ajzen and Fishbein 1977; 1980; Fishbein, 1980) and the Technology Acceptance Model (TAM) (Davis, 1986), are a few of highly recognized theories that have been used to study consumer's acceptance of Internet stores (Kunz, 1997; Salam, 1998; Yoh; 1999). Those studies have yielded insightful findings on Internet stores' characteristics and factors that raise or forbid an individual's acceptance of Internet shopping.

This study argues that an individual accepts or rejects to make a transaction online not only because of the characteristics of the Internet stores but also because of relative advantages that an Internet store offers to consumers. Relative advantage is defined as the benefits accruing to an individual when he or she selects one alternative over others. In our case, the Internet store choice is not made in seclusion but only when it is the preferred alternative over other sales channels such as traditional stores, catalogs, etc. Knowledge about such preferences is the underlying basis for our research.

The major contribution of our study is that we capture consumer preferences for Internet stores in two countries: the U.S. and Thailand. These two countries are very dissimilar thus allowing us to capture international differences. Hence, we are able to provide insights into the global diffusion of the Internet and Electronic Commerce. The next section provides a comparison of the U.S. and Thailand across several dimensions. The third section develops arguments and a parsimonious model of preferential decision-making. Section four explicates the store attributes for making comparative judgments and develops the final research model. The next two sections describe the research hypotheses and the research method. Subsequent sections present data analysis, results, discussion, implications, and conclusions.

2. The U.S. and Thailand – Some Key Differences

The U.S. is a large, western, and one of the most advanced nations of the world, and is in the forefront of technology innovations. By contrast, Thailand is small, less-developed, and eastern country (with population of 61 million people and per capita GDP is \$6400). There are also differences in terms of information technology development and infrastructure. The U.S. is recognized as a leader in IT infrastructure and use of IT applications with 60 main telephone lines per 100 people and 20 mobile phones per 100 people. Many of the IT innovations and products were developed by scientists and entrepreneurs in the U.S. Thailand by contrast has 8.57 main telephone lines per 100 people and has a cellular density of 3.84 cellular subscribers per 100 people. These phone densities are comparatively lower although not among the lowest in the world.

There are also significant cultural differences between the two nations. Hofstede (1991) has proposed five dimensions of national culture: Power Distance, Individualism Vs Collectivism, Masculinity Vs Femininity, Uncertainty Avoidance, and Long-Term Time Orientation. Briefly, power distance is the extent to which a society accepts unequal distribution of power in institutions and organizations. Individualism is the extent to which an individual in society looks after own interest rather than the group. Masculine culture is assertive, tough, and concentrate on material success while feminine is modest, tender, and concentrate on quality of life. Uncertainty avoidance is the extent to which a member in society feels threatened by uncertain or unknown situations. Finally long-term orientation is the extent to which society members give value to fostering of virtues oriented toward future rewards.

The following table summarizes cultural comparison between these two countries based on Hofstede's dimensions (Table 1).

Table 1: Cultural Comparison (Hofstede's Index: A 100-point scale)

Category	Thailand		The United States	
	<i>Index</i>	<i>Ranking</i>	<i>Index</i>	<i>Ranking</i>
Power Distance Index (PDI)	64	21	40	38
Individualism Index (IDV)	20	39	91	1
Masculinity (MAS)	34	44	62	15
Uncertainty Avoidance (UAI)	64	30	43	46
Long Term Orientation (LTO)	56	8	29	17

Source: Culture and Organizations: Software in Mind (Hofstede, 1991)

It is apparent that there is a vast difference between the U.S. and Thailand on these cultural dimensions. The dimensions that may be considered critical to business are: power distance, individualism, and uncertainty avoidance. On power distance, there is less power distance in the U.S. and more in Thailand. High power distance leads to hierarchical structures; on the other hand, it can be argued that the Internet has a more equalizing effect. On uncertainty avoidance, Thailand is much higher meaning it is less prone to risk taking. Internet shopping requires new behaviors which may be considered more risk-taking. Thailand ranks lower on the individualism scale, meaning it is a more collective society. Once again Internet shopping compared to conventional shopping is more individualistic and impersonal, thus may not be easily accepted in Thailand. Thus on all accounts, it seems that Internet shopping would face major barriers in Thailand and similar countries.

Besides the above differences in Hofstede's dimensions between the U.S. and Thailand, the two countries have other differences in national characteristics that could influence consumer preferences between Internet and conventional stores. The gender ratio (male: female) in Thailand is approximately 50:50 (Thai National Statistic Office, 2002), while there appears to be more males (55%) than females (45%) in the U.S (Larimer County Colorado, 2001). It is claimed that males make more online purchases than females (e.g. Forrester Research, 1998). Therefore, the influence of gender on Internet adoption is additionally investigated in this study.

In addition to the gender variable, a more fundamental variable, namely Credit Card Possession, is also examined. Credit card is a major transaction medium that is currently being used to make online transactions (e.g., Turban et al, 2000). Given the difference in the national income between the two countries, credit cards are made more readily accessible in the U.S. than in Thailand. Hence, the effect of credit card possession on consumer preference between Internet and conventional stores is examined in this study.

Until recently, there appear to be only a few studies that relate Internet shopping behavior to culture and the Hofstede's index (e.g., Simon, 2001; Steinwachs, 1999). One of these is the study conducted by Simon (2001). The

study investigated impact of culture on web site perception. In that study, Thailand and the U.S. were representative countries for Asia and North America respectively. The findings demonstrated significant differences in website perceptions across cultural groups. Our study will yield additional insights into Internet shopping behavior.

3. Preferential Decision Making

3.1 Majority Confirming Dimension Strategy: A Strategy for Developing Preferences

When consumers make decisions, there are generally two major goals to be achieved. They are to maximize the accuracy of decision and minimize the cognitive effort (Bettman, Luce, and Payne, 1998). As numbers of alternatives increase, past literature suggests that a decision maker can develop a number of strategies to cope with the alternatives. The majority of confirming dimensions (MCD) strategy is one of the well-adopted strategies that have gained increasing significance in the past twenty years.

The MCD was initially proposed by Russo and Doshier (1983). Alternatives are processed in pairs, with the value of the two alternatives compared on each attribute, and finally the alternative with a majority of better attribute values is retained for subsequent comparisons. In our context, consumers encounter several kinds of sales channel alternatives: Internet store, conventional store, catalogs, home shopping television. However, we will focus only on the Internet store and the conventional store as they provide focus to our study, and because the conventional store is the major alternative to the Internet store.

MCD is the underlying assumption of this study. The basic premise is that the consumer makes a comparison of the Internet store to the conventional store before making a decision to purchase online. This focus is based on the fundamental idea of anchoring and adjustment. In the social judgment theory of attitude change, Sherif and his colleagues (Sherif, Taub, and Hovland, 1958; Sherif and Hovland, 1961; Sherif, Sherif, and Nebergall, 1965) have proposed that there is an "anchor" effect in decision-making process. Intuitively, their studies suggest that the first or the most familiar alternative may serve as an anchor, and this anchor may dominate consumer's overall evaluation of alternatives in a decision situation. A series of studies conducted by Tversky and Kahneman (Kahneman and Tversky, 1972, 1973; Tversky and Kahneman, 1971, 1973, 1974) provided theoretical insights on the role of anchor or reference. Therefore, in our view, it is imperative to analyze Internet shopping (the new alternative) only in comparison to the conventional store (the anchor).

3.2 Preferential Decision Knowledge

Many of the past studies in preferential choice are relevant to product or brand selection (e.g. Ostrom and Iacobucci, 1995; Widing and Talarzyk, 1993; Malhotra, 1986). While consumers also have to make choices between vendor and sales channel alternatives (McGaughy and Mason, 1998), there appear to be a very few studies conducted in this area. We attempt to integrate knowledge of preferential decision making from other areas and apply to the selection of sales channels.

There are several approaches to study preferential choices. One of them is the multiattribute modeling approach. This approach has gained increasing significance in the last three decades (Jacoby, 1976; Kassarian, 1982; Bettman, 1986; Bettman and Jones, 1972, Currim and Sarin, 1984). Within the domain of multiattribute modeling approach, two concepts of preference development have emerged. They are attribute-based preference and attitude-based preference. The first approach suggests that preference formation involves comparing specific attributes of alternatives (attribute-based preference, ABP), while the second approach signifies the overall evaluation of alternatives (attitude-based preference, ADP) (Mantel and Kardes, 1999). When attribute-based preference is used, consumers compare their alternatives in detail. For instance, a consumer, who is engaged in an automobile selection, might want to compare colors, transmission systems, number of seats, size, etc. When attitude-based preference is used, consumers employ their general feelings to develop preferences. Such general feeling might be derived from brand identity, past experience, etc. (Wyer and Srull, 1989).

Despite the growing significance of preferential knowledge, there appears to be contradictory opinions in the relationships between ABP and ADP. One group of researchers believe that ADP and ABP are generated in different situations and therefore they have no relationship to each other. The generation of preferences depends on information-processing strategies (Alba, Hutchison, and Lynch, 1991). Information strategies generally used by consumers could be either stimulus-based or memory-based processing (Hastie and Park, 1986). In stimulus-based processing, all relevant information is observable in the judgment context and consumers can compare alternatives on all attributes (Mantel and Kardes, 1999). This is the situation where ABP is produced. By contrast, in memory-based processing, information about alternatives is limited by human memory. Therefore, the detailed information or attributes of alternatives are neglected and overall comparison toward alternatives is used. This is the circumstance where ADP is generated. In sum, this group of researchers suggested that ADP and ABP do not have a mutual relationship.

Another group of researchers proposed an opposite opinion. Tversky (1969) proposed that alternatives are compared directly on each dimension (attribute), and the differences on those dimensions are summed together to reach a decision. In addition, it was proposed that a decision maker somehow combines all dimensional (attribute) values cognitively and comes to an overall evaluation (attitude) before making his or her decision (Einhorn, 1971). In other words, these propositions assert that the attitude-based preference is the function of attribute-based preference (See Figure 1). This study speculates a mutual relationship between ADP and ABP. Such speculation is based on the common belief that online purchasing is still considered a relatively new alternative and a risky decision. When a decision maker encounters a risky situation, he or she is likely to investigate alternatives in detail. Therefore, it is logical to assume that consumers develop their Attribute-Based Preference. In addition, it is recommended that consumers make purchases with well-known Internet stores to reduce risk. Thereby, it implies the use of the Attitude-Based Preference.

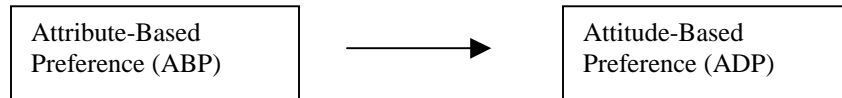


Figure 1: Relationship between Attribute-based and Attitude-based Preferences

We go the next logical step in our research: that is after an individual combines attribute values of alternatives to generate an overall evaluation, the overall evaluation would affect purchasing behavior or the use of an alternative in the comparison process. In this scenario, Internet and conventional stores would be evaluated based on their attribute values to produce an overall evaluation that would lead to the use or the selection of one particular type of store. This process is represented in the Figure 2.

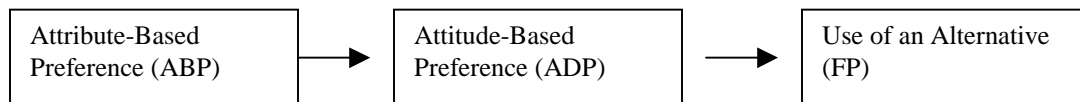


Figure 2: Relationship among Preferences and Consumer's Behavior

4. Store Attributes, Model, and Scale Development

Many of the studies comparing the Internet and conventional stores, although descriptive in nature, provide valuable insights into what attributes should be evaluated to compare these two sales channels. Based on our research, we propose five variables that represent attribute-based preference, namely: Product Preference, Transaction Cost Preference, Accessibility Preference, Security Preference, and Shopping Experience Preference.

In Product Preference variable, there are several attributes used to compare the Internet and conventional stores. Alba (Alba et al., 1997) articulated that Internet retailers provide low product quality (whether perceived or real) and it could prevent consumers from purchasing online. Besides product quality, product variety, product availability, and product customization are additional attributes to consider (Jarvenpaa and Todd, 1997).

In terms of transaction costs, Lee (1998) argues that the electronic market could enhance competition among retailers and stimulate free market behavior in the global market. Intense competition among online retailers could render lower prices and draw the consumer to make an online purchase. Thus, price is a key item in this variable. Despite the reduction in product price, the virtual nature of the Internet store calls for the delivery of the physical product to the customer. It generates another form of transaction cost, namely peripheral cost, which could increase the transaction cost to buyers (Alba et al., 1997). Peripheral cost is said to be all the costs not associated with the price of the product (e.g., shipping and handling).

Accessibility of stores is another factor claimed to be important in attracting consumers to the electronic market. The prediction is that in the U.S., home PCs would reach seventy percent of the people by 2005 (Garber, 1998). The accessibility domain has several attributes as well, i.e., Ease of Access, Shopping Hour Flexibility, and Customer Service Accessibility.

Security and Social Experience are additional factors that play a significant role in comparing the Internet stores with conventional stores. Both could actually deter people from shopping online (Swass, 1996; Bhimani, 1996; Alba et al., 1997). For example, in a study, the hypothesis of pleasure experienced within a store was found positively correlated to unplanned purchasing (Donovan et al., 1994). We include Excitement, Group Interaction, and Social Interaction as attributes in the Social Experience Preference variable. In the Security Preference Variable, the attributes include Credit Card Information Safety and Personal Information Safety.

By combining the relationships in Figure 2 and the attributes discussed above, a model for online purchasing behavior is developed as shown in Figure 3.

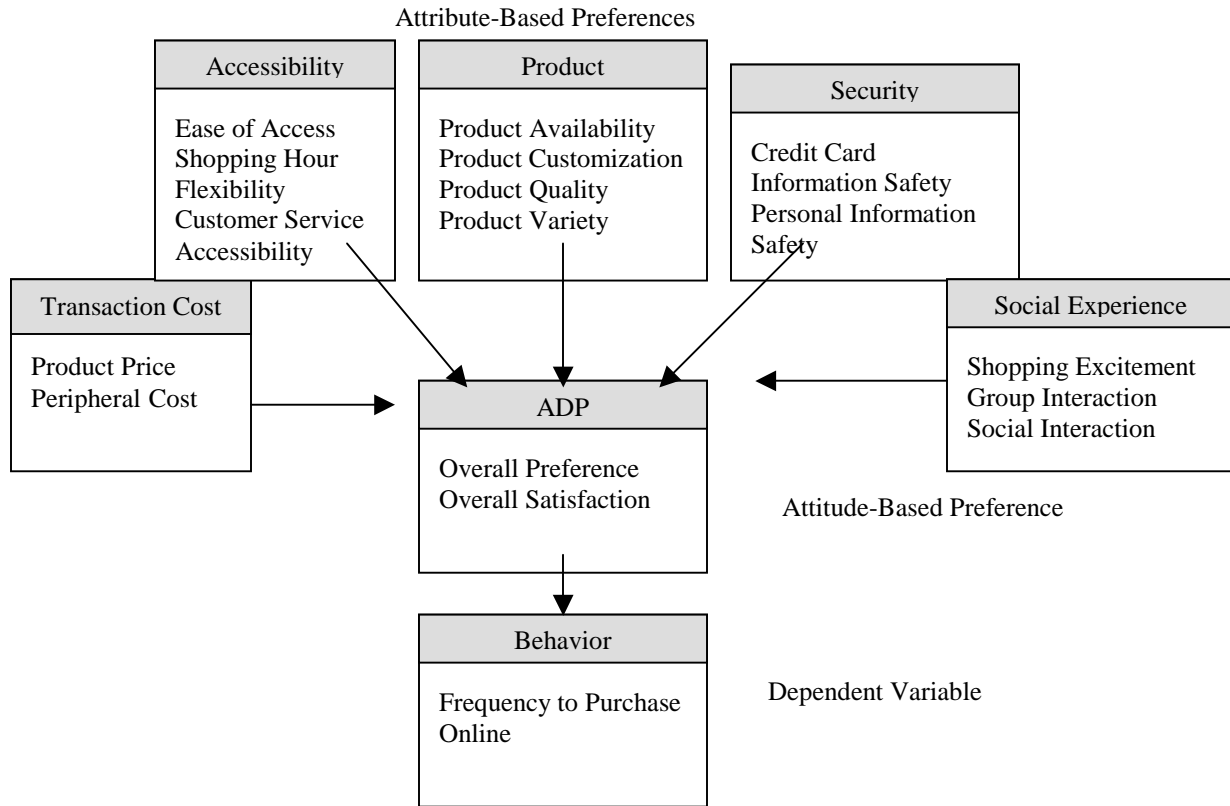


Figure 3: A Model of Online Purchasing Behavior

The fourteen attributes within the five variables were evaluated directly. They are not really latent constructs; so they were treated as explicit variables. Therefore they did not require indirect multiple items to measure them. In order to measure these attributes, a comparative scale was developed as shown below (Figure 4). This scale represents a departure from absolute measurement as in past studies.

1	2	3	4	5	6
Conventional Store is Highly Superior	Conventional Store is Superior	Conventional Store is Somewhat Superior	Internet Store is Somewhat Superior	Internet Store is Superior	Internet Store is Highly Superior

Figure 4: Scale Measuring User’s Preference between Two Stores

Attitude-Based Preference (ADP) is a latent construct. It was measured using two items: “Overall Preference” and “Overall Satisfaction”. To measure the final dependent variable of purchasing behavior, subjects were asked how often they make an online purchase on the following scale (Figure 5).

1	2	3	4
None	1-2 times a year	3-5 times a year	> 5 times a year

Figure 5: Scale Measuring Frequency to Purchase Online

5. Research Hypotheses

Hypotheses are categorized into two groups. The first group of hypotheses investigates relationships with antecedents as shown in Figure 3. The second set of hypotheses examines differences between the U.S. and Thailand. The hypotheses are expressed in their alternate forms based on our expectations and the literature (as discussed earlier).

5.1 Group 1 Hypotheses: Relationships Among Variables

There are two different research opinions in the relationship between ADP and ABP. One stream of research posited that ADP and ABP have no mutual relationship (e.g. Alba, Hutchison, and Lynch, 1991; Hastie and Park, 1996; Mantel and Kardes, 1999), while another stream of research suggested that alternatives are compared directly on each dimension (ABP) and the differences of those dimensions are summed together to research decision (ADP) (Tversky, 1969). The latter opinion postulates that ADP is an outcome of ABP. To test the relationship between ADP and ABP in the context of online purchasing, H_1 is proposed. In addition, this study proposes that the adoption of the Internet is influenced by relative advantages that an Internet store offers to consumers. We use frequency to purchase online as a measure of consumer's adoption of Internet stores resulting in the second hypothesis. H_1 and H_2 are presented as follows.

H_1 : There is a positive relationship between Attribute-Based Preference (ABP) and Attitude-Based Preference (ADP). These are actually multiple hypotheses, one for each attribute.

H_2 : There is a positive relationship between Attitude-Based Preference (ADP) and Frequency to Purchase Online (FP)

5.2 Group 2: Differences between US and Thailand

The primary purpose of this study is to compare Internet adoptions between the U.S. and Thailand. Since this research argues that Internet adoption is the outcome of ADP and ABP, it is important to conduct an analysis to compare all variables in this study's proposed model, including the Frequency to Purchase Online, Attitude-Based Preference (ADP) and Attribute-Based Preferences (ABP). The following hypotheses represent comparison of such variables.

H_3 : The frequency to purchase online (FP) is higher in U.S. than in Thailand.

H_4 : There is a difference in Attitude-Based Preference (ADP) in the U.S. and Thailand.

H_5 : There are differences in Attribute-Based Preference (ABP) in the U.S. and Thailand.

6. Research Method

An international study by its very nature faces several challenges requiring creative strategies on the part of the investigators. Time, budget, language, and unexpected disparities between the countries produce impediments normally not expected in the U.S. environment alone.

The study employed the survey method as its underlying methodology. The survey questionnaire includes two sections. The first section consisted of seventeen questions, representing ABP, ADP, and the behavior variable. The second section was designed to gather demographic information about the respondents. Two versions of the questionnaire, English and Thai, were used in the U.S. and Thailand respectively. The original version was in English. After translation, the Thai version was reviewed by a professor in the Mass Communication Department at Thammasat University in Thailand to ensure similar meaning across the two language versions.

Subjects were carefully chosen. We chose to use student subjects for several reasons. Student subjects demonstrate several characteristics that facilitated our research. First, they are about the same age group in the two countries. More importantly, they exhibit similarity in the amount of Internet and computer exposure and usage. This is because students in both countries have free Internet access offered by the University they attend. With these characteristics, the findings of differences between the two countries could be more appropriately explained by the different perceptions of relative advantages of the two store types rather than access or availability of the Internet. In order to further minimize the effect of extraneous variables, the classes where the instrument was administered were selected carefully. For example, a vast majority of the classes consisted of masters and senior students. Their major areas of study were from management, accounting, finance and other non-computer related fields. We believe it is a strength of the study that we did not include computer-related fields as students from this field may exhibit unique behaviors.

Data was gathered by having the instructor administer the survey instrument to students in specific classes. A brief explanation of the survey's purpose was given to the students prior to the survey.

7. Data Analysis and Results

7.1 Sample Characteristic

The sample contains responses from the two countries, the U.S. and Thailand. American students, who were not U.S. citizens, were eliminated from the study. From a total of 179 subjects, eighty-nine are Americans and ninety are Thai. The American group has 50 males (56.18%) and 39 females (44.82 %), while the Thai group has 26 males (28.89%) and 64 females (71.11%). Since this study additionally endeavors to test the effect of credit card possession on consumer preference, data on this additional categorical variable was collected. This study found that the majority of American sample (87.64%) had at least one major credit card, while the majority of Thai subject did not (72.22%). This demonstrates a potential influence of credit card possession on consumer preference for using the Internet store.

7.2 Latent Variable Reliability

For exploratory research, a value of 0.50 or higher for the Chronbach’s alpha is deemed appropriate (Chronbach, 1951). The only latent variable Attitude Based Preference (ADP) had a Chronbach’s alpha of 0.5824. This was considered acceptable.

7.3 Correlations between Variables

Using all subjects (Thai and American combined), Table 2 presents results of bivariate correlations between the two items in Attitude-Based Preference and Frequency to Purchase online. Both items in ADP have a significant positive relationship to the Frequency to Purchase Online at $p < 0.01$.

Table 2: Correlation Test between Attitude-Based Preference and Frequency to Purchase Online

Variable		Correlation Test	
		Frequency to Purchase Online	
		Correlation	p value
Attitude-Based Preference	Overall Preference	0.281	0.000**
	Overall Satisfaction	0.207	0.005**

** represents a significant result at $p < 0.01$

Thus hypothesis H_2 is supported. This is an important result in light of existing theories of technology use such as the Technology Acceptance Model and the Theory of Reasoned Action. The result makes a strong statement that E-Commerce and Internet shopping are not merely based on absolute perceptions of ease of use and usefulness, but also on their comparative advantage to existing sales channels.

Table 3 presents the correlation tests of relationships between the various attributes used to compare Internet stores to conventional stores and the two items of the attitude-based preference scale (ADP). All of the attributes have at least one significant relationship with the items of the attitude-based preference and these relationships are in the positive direction. Thus hypothesis H_1 is supported. This signifies that the formation of the consumer’s preference for the electronic market is based either explicitly or implicitly on the evaluation of specific attributes in comparison with the conventional stores. An obvious inference is that it is important for business to spend its resources on improving specific attributes that could affect consumer’s purchasing decision in electronic market rather than solely focusing on the overall appeal.

7.4 Analysis of Country Difference in Consumer’s Preference toward Internet Stores

In order to evaluate consumer’s preferences in the U.S. and Thailand toward Internet stores, it is important to test for differences in consumer’s behaviors to use Internet stores. The ANOVA test comparing the means of the frequency of online shopping in the two countries produced a significant result. ANOVA generated an F value of 22.452 with is significant at a p value of 0.000. The mean values are 2.15 and 1.48 with standard deviations of 1.03 and 0.85 for American and Thai subjects respectively. These statistics confirm that American subjects make transactions online more frequently than those in Thailand. Hypothesis H_3 is supported. The supported result is found to be even stronger when gender and credit card possession variables are added to the analysis.

In order to test H_5 and find differences in attitude-based and attribute-based preference, a MANOVA analysis is required. There appears to be strong evidence postulating differences in consumers’ attribute preferences (ABP) in these two countries. The test statistics include Pillai’s Trace, Wilk’s Lambda, Hotelling’s Trace, and Roy’s Largest Root. All test statistics generate significant p-values at 0.000. A further analysis was conducted by incorporating the categorical variables gender and credit card possession to the MANOVA analysis. Such analysis produced an even

stronger difference in consumer preference of using Internet store between the representative countries. Table 4 shows the detailed summary of MANOVA results by category.

Table 3: Correlation Test between Attribute-Based Preference (ABP) and Attitude-Based Preference (ADP)

Category		Attributes		Correlation Test			
				Overall Preference		Overall Satisfaction	
				Correlation	p value	Correlation	p value
Product	Product Availability	0.246**	0.001	0.351**	0.000		
	Product Customization	0.160*	0.033	0.376**	0.000		
	Product Quality	0.263**	0.000	0.271**	0.000		
	Product Variety	0.346**	0.000	0.339**	0.000		
Transaction Cost	Price	0.228**	0.002	0.115	0.125		
	Peripheral Cost	0.191*	0.010	0.366**	0.000		
Accessibility	Customer Service Accessibility	0.170*	0.023	0.337**	0.000		
	Ease of Access	0.168*	0.025	0.277**	0.000		
	Shopping Hour Flexibility	0.069	0.359	0.259**	0.000		
Protection	Credit Card Information Safety	0.241**	0.001	0.248**	0.001		
	Personal Information Safety	-0.017	0.818	0.182*	0.015		
Pleasure	Excitement	0.195**	0.009	0.329**	0.000		
	Group Interaction	0.248**	0.001	0.239**	0.001		
	Social Interaction	0.263**	0.000	0.187*	0.012		

*represents a significant result at $p < 0.05$; ** represents a significant result at $p < 0.01$

Table 4: MANOVA Analysis of Attitude-Based Preference (ADP) and Attribute-Based Preference (ABP) between the U.S. and Thailand

Domain	Attributes	MANOVA Test
		P Value
Product	Product Availability	0.000
	Product Customization	0.000
	Product Quality	0.595
	Product Variety	0.009
Transaction Cost	Price	0.000
	Peripheral Cost	0.045
Accessibility	Customer Service Accessibility	0.077
	Ease of Access	0.000
	Shopping Hour Flexibility	0.000
Protection	Credit Card Information Safety	0.574
	Personal Information Safety	0.000
Pleasure	Excitement	0.728
	Group Interaction	0.000
	Social Interaction	0.000
ADP	Overall Preference	0.285
	Overall Satisfaction	0.332

In H_4 testing, using only country variable in MANOVA for finding difference of attitude-based preference variable (ADP) did not produce the expected result. In other words, H_4 is not supported by country variable alone. Initial result of MANOVA produced the value of 0.169 for the Pillai's Trace and Hotelling's Trace statistics. The

detailed p-value of items in ADP variable is provided in Table 4. A further analysis was conducted by incorporating Gender and Credit Card Possession variables in MANOVA. The result shows a significant difference of ADP when these variables are added into the analysis. MANOVA shows a significant difference in ADP between the two countries with significant values of 0.094 and 0.013 when Gender and Credited Card Possession variables are incorporated respectively. The p-value of items within ADP is also found to be supportive for H_4 . For instance, the p-value of Overall Preference dropped from 0.285 (See Table 4) to 0.015.

Since we found differences in attitudes between the two countries, and as per our previous analysis, attitudes are related to attributes, we expected to find several differences in attribute-based and attitude-based preferences. This is certainly the case as shown in Table 4. One again it is clear that the significant differences in consumer's behaviors and attitudes in the two countries are derived from their differences in attribute preferences towards the Internet and conventional stores. According to higher mean values (shown in Table 5), Internet stores fare a lot better in the eyes of American subjects than Thais on most attributes. For instance, the mean value of product availability for American is 3.73 (S.D. = 1.46), while it is 2.44 (S.D. = 1.32) for Thai subjects. The superior position of the Internet stores on most attributes by American subjects easily explains the far greater adoption of E-Commerce in the United States.

It is also revealing to note that there are a few attributes where there was no significant difference between the Americans and the Thais. Both American and Thai subjects do not have significant difference in their attribute preference for credit card information safety on the Internet vs. conventional stores. Given that the means of 2.38 and 1.51 for Americans and Thais are below 3, both expressed that shopping at conventional stores provides better security of their credit card information. Similar interpretations can be applied to product quality and excitement. The evaluation of both attributes is not significantly different for the two countries; both countries perceive conventional stores to provide higher quality and higher shopping excitement.

Table 5: Analysis of Means and Standard Deviations of Consumer's Preferences in the U.S. and Thailand

Domain		Attributes		MEANS and Standard Deviation			
				USA		Thailand	
				Means	S.D.	Means	S.D.
Product	Product Availability	3.73	1.46	2.44	1.32		
	Product Customization	3.34	1.34	2.36	1.38		
	Product Quality	2.73	0.96	2.64	1.18		
	Product Variety	3.37	1.47	2.79	1.46		
Transaction Cost	Price	3.56	1.23	2.43	1.26		
	Peripheral Cost	2.81	1.43	3.24	1.46		
Accessibility	Customer Service Accessibility	2.25	1.16	2.60	1.47		
	Ease of Access	4.28	1.54	2.88	1.82		
	Shopping Hour Flexibility	5.02	1.20	3.74	1.65		
Protection	Credit Card Information Safety	2.38	1.51	2.51	1.55		
	Personal Information Safety	3.78	1.79	2.83	1.61		
Pleasure	Excitement	2.92	1.43	2.94	1.79		
	Group Interaction	1.97	1.10	2.73	1.52		
	Social Interaction	1.63	0.83	3.21	1.73		
ADP	Overall Preference	2.42	1.40	2.63	1.32		
	Overall Satisfaction	2.55	1.22	2.37	1.30		

8. Discussion

Our results show unequivocally that comparatively Americans prefer the Internet stores more than their Thai counterparts. However for both countries, overall, conventional shopping is preferred over Internet shopping, although less so in the U.S. As shown in Table 5, the means for overall preference for online buying compared to conventional buying for the U.S. and Thailand were below 3.0, indicating a preference for the conventional stores. This result should not be too surprising as E-Commerce, while rapidly expanding, is still in its infancy. Over time and with maturity of the E-Commerce market, we expect to see continued growth in online activity. In fact, in some

sectors of the industry such as airlines, banking and service, the role of conventional stores may already be severely diminished.

Table 5 yields several interesting findings, which could be explained by national and cultural factors. First, although the convenience of Internet stores (such as ease of access and shopping hour flexibility) is widely accepted in the U.S. and many researchers, Thai subjects still reported that they find conventional stores easier to access than the Internet stores. In Thailand, people can find various kinds of stores that are open even all night. In fact, people can even find good restaurants and shopping malls that conduct their business at night at several locations. Thailand is known for its travel industry and having businesses open overnight supports the industry. Therefore, the convenience aspects of the Internet stores are overshadowed by the prevailing business practices and people's adaptation to these practices.

Second, while American subjects reported that there is not much difference in price between Internet and conventional stores (mean value is close to 3.5), Thai subjects reported that they could get lower prices from stores in the traditional environment. This could be explained by the nature of doing business in Thailand. In several locations, it is a common practice for customers to negotiate product prices. Only some Internet stores take this aspect into consideration and offer auction functionality on their websites. The online auction has not been widely accepted by Thai people. Therefore, the negotiation process in Thai markets and the value of "good deals" obtained in this manner dominates consumers' perceptions of price advantage.

According to the actual buying behavior reported earlier, Thais do much less Internet shopping than the Americans. While much of that is explained by the attributes discussed above, an underlying root cause may be the culture. At least, two cultural dimensions (Hofstede 1991) come into play: uncertainty avoidance and individualism/collectivism. Thais are high in uncertainty avoidance and are a more collectivist society. Internet buying requires higher levels of risk taking and is more impersonal rather than a group activity compared to conventional shopping. These two dimensions are thus consistent with their shopping behavior.

There are some attributes (Table 5) where the Thais rated Internet stores higher than Conventional stores compared to the Americans. For example, they rated Internet stores superior in terms of group interaction, social interaction, and peripheral cost. On peripheral costs, the shipping and handling are actually lower in Thailand compared to the U.S. The higher rating of group interaction and social interaction is somewhat puzzling to us and may require further exploration. For example, it could be that the Internet and its various group features are relatively new to the Thai users, and there may be a Hawthorne effect in their reporting.

Among the limitations of the study are the following. We treated the fourteen attributes within the five variables as explicit measures and evaluated them directly. Some may prefer to view them as latent constructs and may wish to develop multi-item scale for each. Two other limitations that should be taken into consideration are the subjectivity of this study to common method variance and the generalizability of the student subjects to the broader marketplace.

9. Implications and Conclusions

The study provided empirical results demonstrating that the Internet stores and E-Commerce have not yet reached their full potential in international markets. The acceptance of the Internet store is lower in developing countries where consumers rely heavily on conventional stores. By conducting an investigation of the various attributes that impact online purchasing behavior, we have highlighted areas which need improvement before more diffusion of E-Commerce can occur in developing countries. This has implications for businesses which want to go online, governmental bodies desiring to promote E-Commerce, IT companies, and business and industry associations. They all need to work on improving the lacking attributes so as to make E-Commerce more attractive to consumers. For example, while the governmental sector is working to develop more effective laws to enable transactions in the E-Commerce environment, banking industry could do more to make credit cards readily available to global consumers. Investing business resources to develop a website that reaches the likely customers in these countries should be done carefully. While there are a large numbers of pure Internet stores in the U.S., it might be more appropriate for businesses in Thailand and other less-developed nations to adopt a hybrid strategy, where an Internet store needs to have an associated physical store in order to boost the consumer's confidence.

In term of theoretical contributions, we have proposed and developed a scale measuring consumer's adoption of Internet stores in comparison with a competing alternative of conventional stores. We also proposed and validated a model showing relationships between attribute based preference, attitude based preference, and online buying behavior. Thus we have provided a new approach as well as factors for consumer behavior related to electronic commerce. Future research could be directed to model and scale refinement, and also to compare and relate our model to other theories of technology adoption, such as the Theory of Reasoned Action and the Technology Acceptance Model. Future studies could also replicate this study in other countries as well as with non-student

subjects. Doing so would enhance the generalizability of the model and may yield additional insights. The model may also be augmented with other factors such as the country's development level, economic status, legal issues, and an explicit consideration of culture.

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