

Impact of Perceived usefulness, Perceived ease of use and Perceived Enjoyment on Intention to shop online

T. Ramayah

Chairman, Operations Management Section, School of Management,
Universiti Sains Malaysia, E-mail: ramayah@usm.my

Joshua Ignatius

Postgraduate student, Operations Management Section, School of Management,
Universiti Sains Malaysia, E-mail: joshua_ignatius@yahoo.com

Abstract

This paper explores the relationship between the three beliefs about online shopping i.e. perceived usefulness, perceived ease of use and perceived enjoyment and intention to shop online. A sample of 150 respondents was selected using a purposive sampling method whereby the respondents have to be Internet users to be included in the survey. A structured, self-administered questionnaire was used to elicit responses from these respondents. The findings indicate that perceived ease of use ($\beta = 0.70$, $p < 0.01$) and perceived enjoyment ($\beta = 0.32$, $p < 0.05$) were positively related to intention to shop online whereas perceived usefulness was not significantly related to intention to shop online. Furthermore, perceived ease of use ($\beta = 0.78$, $p < 0.01$) was found to be a significant predictor of perceived usefulness. This goes to show that ease of use and enjoyment are the 2 main drivers of intention to shop online. Implications of the findings for developers are discussed further.

Keywords: Online shopping, perceived usefulness, perceived ease of use, perceived enjoyment, intention to shop online

1.0 Introduction

Internet retailing is one of the fastest growing distribution channels for commerce. Although it generated the lowest in terms of the total retail sales in the United States between 1998 and 2002, yet its significant growth each year warrants attention. Table 1 shows that Internet retailing increases by approximately USD20 billion each year. Europeans spent on average EUR430 per individual compared to Americans (EUR543) between August and October 2002 (http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905358734&rel=true). In Asia, China has been projected to achieve tremendous growth in Internet commerce revenue throughout the past four years (http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905357829&rel=true). This growth was partly contributed by globalization and technological advancements that led to consolidation efforts from retailers worldwide.

Table 1

Total Retailing: Retail Sales by Distribution Channel 1998-2002

	1998	1999	2000	2001	2002
High Street Retailing	1, 673, 348	1, 904, 334	2, 041, 697	2, 100, 186	2, 221, 533
Homeshopping	78, 335	88, 381	99, 127	105, 843	111, 147
Internet	10, 644	26, 551	47, 537	61, 141	88, 444

Retailing					
Direct Selling	37, 140	39, 280	41, 210	43, 030	45, 120
Total Retail Sales	1, 799, 467	2, 058, 546	2, 229, 571	2, 310, 200	2, 466, 245

Source: Euromonitor (2003)

The convergence of technologies and the potential in Internet as a distribution channel had significantly altered the operations of retailers worldwide. In the United States, the retail industry witnessed larger hypermarkets concentrating on centralizing their operations and consolidating divisions to provide increased product offerings. Hypermarkets were thus able to offer a wider range of cheaper products whilst obliterating smaller independent retailers. However, hypermarket's inherently large physical size precludes them from operating at areas or population that is insufficient to support them. Therefore, Internet retailing can serve as an alternate distribution channel to increase hypermarket sales. For example, British hypermarket, Tesco boasts more than a million online customers who purchased more products online than offline. With 70,000 online orders per week, Tesco.com is successful in maximizing the existing stores to meet the retail market demand (Boston Consulting Group, 2001). This allows the delay of large investments in physical assets (e.g. distribution centers) while capturing the retail niche from less populated areas.

Although the growing retail industry has provided an alternative distribution channel, yet skepticism still surrounds security issues (Bhiamani, 1996), payment options (Panurach, 1996), access (Hoffman & Novak, 1998) and technological restrictions (Bell and Gemmell, 1996) in Internet shopping¹. In Malaysia, the cynicism proved to be disturbing, with the TNS Global eCommerce Report (2002) indicating that 38% of Malaysians are more comfortable in purchasing goods from shopping centers while 36% are apprehensive in divulging personal credit card details. Both figures are significantly higher than the mean average of collective global trend of 28 – 30%.

Given the barriers to Internet retailing, favorable projections on Internet retailing from Boston Consultancy Group (2001) and Euromonitor (2003) seemed contradictory. However, this study believes that the favorable growth projected is still possible if certain factors offset these Internet shopping barriers. From the perspectives of national policy, governmental efforts have proven imperative in paving the way for adopting new technologies and to ward off technophobia. Additionally, efforts such as the Computer Crimes Bill 1997; Digital Signature Bill 1997; Copyright Bill 1997 and Communication and Multimedia Bill 1998 (Ramayah et al., 2003) are among the few that had been in place to curb online purchasing fraud. In terms of security, there are credit card companies such as American Express®, which offers its "Online Fraud Protection Guarantee" that do not hold their customers liable for unauthorized transactions. With regards to infrastructure, Malaysia boasts to have the world's fastest Internet backbone infrastructure developed by Cisco Systems Technology (Lombardo, 1999).

Although encouraging policies and infrastructure are “anti-internet shopping barriers”, yet they are static in nature and can only account for a fixed variance in understanding of individuals' susceptibility to engage in Internet shopping. Meaning, they are there to facilitate Internet shopping and do not change for years and cannot be directly manipulated to increase Internet shopping acceptance among Malaysians. Therefore, this study seeks to introduce and explain the “barrier off-setters” or anti-Internet shopping barriers of perceived ease of use (PEU), perceived usefulness (PU) and perceived enjoyment (PEnj) from the Technology Acceptance Model (TAM) literature. By studying these three constructs, this study believes

that e-retailers can capture the potential market by understanding the status quo of current shopper perceptions.

1.0 Technology Acceptance Model

Much literature surrounding customer attitude to adopt a particular technology has been derived from the Technology Acceptance Model (TAM). In the past, applications and modifications of TAM range from the implementation of ERP system (Kwasi & Salam, 2004) to mobile services (Kleijnen, Wetzels & De Ruyter, 2004). All studies were either interested in “predicting” the intention in adopting a particular technology or assessing the usage itself. In the latter, the base of the technology has long been in existence, in turn allowing the study to be researched on the outcome of the actual application. In contrast, the diffusion rate in the former is slower, thus calling for the attention to “predict” rather than addressing the actual outcome of the intention.

To this end, the “prediction” vs. actual usage can be observed by comparing studies of different technological “newness”. For instance, studies on personal computer had investigated the actual usage (e.g. Ramayah, Ignatius & Aafaqi, 2003), while recent technological acceptance such as e banking (e.g. Yi-Shun et al., 2003, Ramayah et al., 2003) dropped the actual usage construct and focused on the intent criterion alone. Likewise, since the adoption of Internet retailing is at its initial stages in Malaysia, this study seeks to measure the potential online shopper’s intent and not the actual purchasing.

The behavioral intent construct as a proxy to predict the actual usage had been successful thus far. Warshaw and Davis (1985) define behavioral intention as “the degree to which a person has formulated conscious plans to perform or not perform some specified future behavior” (p. 214). This is in line with the Theory of Reasoned Action (Fishbein & Ajzen, 1975) and its successor Theory of Planned behavior (Ajzen, 1985), which contend that behavioral intention is a strong predictor of actual behavior. In the application of information systems, the TAM has been successfully used by many researchers to predict behavioral intent towards the use of information technology (Ramayah & Jantan, 2003; Ramayah, Sarkawi & Lam, 2003; Legris, Ingham, & Collette, 2002). Unlike the TRA, Davis et al. (1991) and Chau and Hu (2001) found that the subjective norm did not directly influence behavioral intent, and as the result, it was not included into their TAM. Nevertheless, Brown et al. (2002) and Venkatesh and Davis (2000), found that the subjective norm does significantly influence behavioral intention.

The TAM has also observed similar evolvement through time. As compared to the original TAM by Davis, Bagozzi and Warshaw (1989) in figure 1, the TAM has since been updated by Venkatesh and Davis (1996) by means of removing the attitude variable from the said model, as it does not fully mediate the relationship between both perception constructs (i.e. perceived ease of use and perceived usefulness) and behavioral intent. The findings of Brown et al. (2002) likewise concurred with the preceding researchers. This form of the augmented TAM (i.e. excluding the attitude construct) was successfully applied by Ramayah and Jantan (2003), Jantan, Ramayah, and Chin (2001), Ramayah et al. (2002), Ndubisi et al. (2001), Venkatesh and Davis (1996), Venkatesh and Morris (2000).

¹ Internet shopping refers to individuals engaging in online purchasing while Internet retailing is viewed from the perspective of the retailers and the industry as a whole.

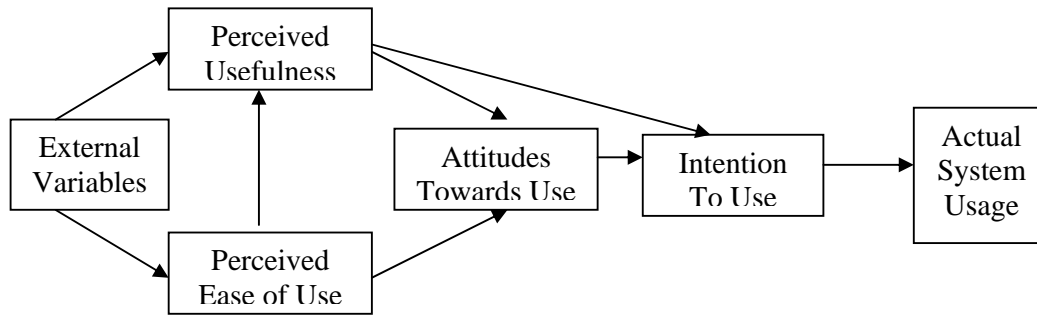


Figure 1: Technology Acceptance Model (Davis et al., 1989)

2.0 Shopping Orientation

The setback of TAM is that it treats Internet shopping at the outset of the technology. In other words, it views Internet retailing as a communication medium to purchase without considering the disposition of the potential online shoppers. Due to certain intrinsic values that favor the choice in the medium of purchase, this study cannot incline towards the adoption of the retail technology by discounting the reasons of the purchase. In this regard, the Theory of Reasoned Action and Theory of Planned Behavior is crucial in explaining the relationship between one's belief and attitude which forms the intention to engage in e-shopping. This research argues that the belief (e.g. perceived enjoyment) that forms the potential e-shopper's intention depends on the shopping orientation of the e-shopper. According to Gehrt et al. (1992), shopping orientation refers to the general predisposition of potential e-shoppers toward the act of shopping. Although the predisposition can be manifested in different forms, among which includes the means of information search, alternative evaluation and product selection, yet this study in essence believes that the orientation can be categorized as either the result of an economically or recreationally motivated construct. Nevertheless, this study expects that both derived enjoyment and satisfaction differently.

Literature on economically motivated Internet shoppers can be traced back to Stephenson and Willet's (1969) price-bargain-conscious shopper. Additionally, economic-convenience shopper (Bellenger & Kargoankar, 1980), price shopper (Lesser & Hughes, 1986) and value for money shopper (Shim & Mahoney, 1992) all have the same connotation to what constitutes an economic shopper. These profile of shoppers are believed to derive enjoyment/satisfaction from purchasing products that are cheap. Recreational shoppers, on the other hand, were believed to favor the physical act of "window shopping" than to concern with product-price issues. In Internet Shopping, recreational shoppers are believed to enjoy the experience of browsing for products; the concept that is similar to "window shopping" in conventional purchasing.

Although some researchers (e.g. Rowley, 1996) support the notion that recreational shoppers prefer high-street shopping than e-shopping, this study believes that the factor depends also on other factors such as the product type and the perceived convenience involved. Other researchers (e.g. Donthu & Garcia, 1999) confirmed that convenience is the main reason for the motivation to engage in Internet purchasing and could lead to an enjoyable shopping experience. Nevertheless, in order to access these factors remain beyond the scope of this study. However, this study anticipates that be it for convenience reasons or economic reason (i.e. regardless of the shopping orientation), shoppers would still have to be motivated by

enjoyment in the act of purchasing. As such, this study strongly believes that perceived enjoyment should be included in the discussion on shopping orientation.

4.0 Research Framework

Figure 2 illustrates the modified TAM developed for this study to understand the intention of potential Internet shoppers. As mentioned above, the attitude construct is removed from this research model while the perceived enjoyment is included to investigate the assertion that an enjoyable shopping experience is essential in online shopping.

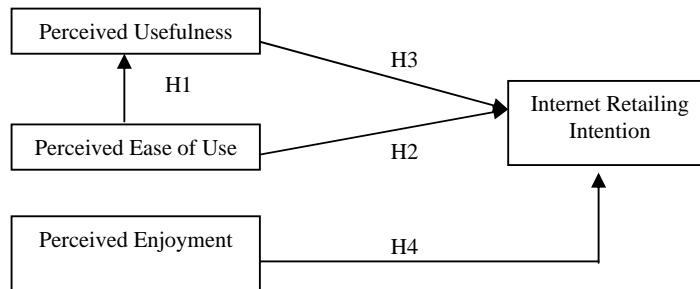


Figure 2: An integrated Framework of Beliefs and Intention

4.1 The Relationship between Perceived Usefulness/ Perceived Ease of Use and Intention towards Use

Since behavioral intent depends on cognitive choice, a potential Internet shopper can either respond favorably or unfavorably towards engaging in online purchasing. Meaning, the “like/dislike nuance” would be based on whether the tradeoff is beneficial to the potential Internet shopper as opposed to other forms of retailing. Partly, this study believes that the power to attract online shoppers lies in the technology’s usability and usefulness. This is in line with Davis (1989) who defines the latter as perceived usefulness (PU), i.e. the belief that using the application would increase one’s performance. In this context, the performance would be centered in the benefits of purchasing a product through Internet retailing minus the tradeoff of a physical retailing. Additionally, the Internet retailing should be “free from effort”, which reflects the former as the perceived ease of use construct in the TAM of Davis (1989).

In the past, researchers (e.g. Koufaris, 2002) have validated the construct of PU and they were found to influence the intention of potential Internet shoppers. However, study on Internet retailing from the TAM perspective is limited, nevertheless the PU construct still garnered tremendous support from many other technological applications. For example, Horton et al. (2002) asserted the existence of a positive influence of PU on intention in Intranet media. Additionally, Agarwal and Prasad (1999); Chau and Hu (2002); Davis, et al. (1989); Hu et al. (1999); Igbaria et al. (1995); Igbaria (1993); Mathieson (1991); Mathieson et al. (2001); Moon and Kim (2001); Ramayah et al. (2002); Venkatesh and Davis (2000) also reported that PU is significant and positively influences the behavioral intent. Hence, it is expected that:

H1: There is a positive influence of perceived usefulness on the intention to engage in Internet shopping.

Similar to PU, PEU plays a major role in Internet shopping too. Although Internet shopping is surmised to have beneficial outcomes, yet the hassle of engaging in the interaction medium (i.e. website) could prove to be daunting for some consumers. In short, the PEU is associated with the “user-friendliness” of the website. If the hassle proves to outweigh the benefit of purchasing through the net, then potential Internet shoppers would prefer to purchase through conventional channels. One of the factors that contribute towards the unfriendliness of some websites of Internet retailers is long download times. Additionally, poorly designed forms might cause potential e-shoppers to lose focus of their carts and purchases. In other words, these barriers reduce the perception on the ease of use of Internet shopping, therein, allowing Internet users to develop a negative attitude. In turn, this leads to Internet shoppers’ unwillingness to engage in Internet shopping. Similarly, this study anticipates that:

H2: There is a positive influence of perceived ease of use on the intention to shop online.

4.2 The relationship between perceived ease of use and perceived usefulness

There are many researchers (e.g. Moon & Kim, 2001; Aladwani, 2002) who have studied the relationship between perceived ease of use and perceived usefulness, nonetheless, the relationship remains contradictory. For instance, Gefen and Straub (1997) discovered that the relationship was not significant in predicting e-mail acceptance as a technology, while others (e.g. Jantan, Ramayah & Chin, 2001; Moon & Kim, 2001) proved otherwise. In the context of Internet shopping, both are surmised to be closely linked as the argument is such that an Internet user who perceives that purchasing through Internet is effortless should in turn develop a tendency to perceive it as useful. In part, this is due to the fact that an Internet user would inherently try to mould his/her perception of Internet shopping based on his/her experiences in engaging in Internet shopping and the ease in which the task was executed (i.e. perceived ease of use). Therefore, we hypothesize that

H3: There is a positive influence of perceived ease of use on perceived usefulness of online shopping.

4.3 The relationship between perceived enjoyment and intention to shop online

There are many motivational reasons that govern individual’s intention to shop, which includes overcoming boredom, peer group influence and status consciousness (Reid & Brown, 1996). In other words, it is not necessarily to meet a need of products or services. In the past, regardless of their motivational consciousness, potential shoppers can be classified into two categories, which are economic or recreational shoppers (Bellenger & Kargoankar, 1980). The former centers on shoppers who shop out of leisure reasons while the latter is more concerned with the value and the bargain associated with the purchase. Additionally, Reid and Brown (1996) added that economic shoppers are more often than not to reclude themselves from unnecessarily engaging in the shopping experience/act.

However, the adoption of non-store environments such as Internet retailing has provided a readjustment in the shopping orientation literature. In a glance, researchers tend to attribute convenient seeking shoppers to non-store formats while recreational shoppers to conventional forms. Nonetheless, by investigating the demographic profiles of Internet shoppers of past studies (e.g. Crisp, Jarvenpaa & Todd, 1997), they were found to be teenagers who have a great deal of knowledge in Internet tools. Hence, it might be more convenient, economic or

enjoyable for those who are computer literate to engage in Internet shopping than conventional means. Additionally, shopping orientation could not discount the inclusion of enjoyment, be it in the form of dealing with the technology or the actual satisfaction derived from having the products delivered to the doorstep. The fact that some researchers (e.g. Burke, 1998; Jarvenpaa & Todd, 1997) found convenience to be the prime factor in engaging in Internet retailing suggests that there is a great deal of satisfaction derived from online purchasing.

This satisfaction can be expressed in terms of the “feeling of joy, elation, pleasure” that are associated with the individual’s act in purchasing through the Internet. In South East Asia, Teo and Lim (1999) found that perceived enjoyment have a positive impact on Internet users in Singapore. Hence, this study further adds and expects that:

H4: *There is a positive influence of perceived enjoyment on the intention to shop online.*

5. Research Methodology

This research involved a field study that examined the relationship between perceived ease of use, perceived usefulness and perceived enjoyment with intention to engage in online shopping. This study’s research instrument consists of a 5-part questionnaire that was modified from various sources in order to gather information regarding demographics, perceived usefulness, and perceived ease of use, perceived enjoyment and intention towards use. Sample of the measures and the variables are shown in table 2.

Table 2
Questionnaire Sources

Section	Sample Questions	Source
PEU	Overall, online shopping or transaction would be easy for me.	Adapted based on Davis (1989) and Chen (2001)
PU	Using the Internet allows me to increase my ability to purchase the products that I desire.	Adapted based on Davis (1989), Moore & Benbasat (1991) Chen (2001)
Perceived Enjoyment	I dislike shopping.	Crisp, Jarvenpaa & Todd (1997)
Intention towards use	I could see myself using the World Wide Web to buy a product.	Adapted from Ajzen & Fishbein (1980)

6. Population and Sample

The sample consisted of 150 staff of a public institution of higher learning that was selected through convenience sampling. Generally, the respondents have been exposed to the WWW as well as having been exposed to the concept of Internet shopping. The demographic profile of the respondents is presented in Table 4. From table 3 it can be seen that 40.7% of the respondents are female whereas 59.3% of them are male. As for ethnic composition, 49.3% of the respondents are Malays, 36.7% are Chinese, followed by 7.3% and 6.7% of Indian and others respectively. Majority of the respondents are from the 31-40 years age group (33%) and hold a PhD (47.4%) indicating that the sample consists of predominantly lecturers.

Table 3
Demographic Profile

Variable		Frequency	Percentage
Gender	Female	61	40.7
	Male	89	59.3
Race	Chinese	55	36.7
	Indian	11	7.3
	Malay	74	49.3
	Others	10	6.7
Age	≤ 20	3	2
	21-30	29	19.3
	31-40	50	33.3
	41-50	47	31.3
	> 50	21	14
Education Level	Secondary school	8	5.3
	Diploma	14	9.3
	Bachelors degree	24	16
	Masters degree	33	22
	PhD	71	47.4

7. Goodness of Measures

7.1 R-type Factor Analyses

There are two statistical tests that were carried out for the purpose of testing the goodness for all our variables, which are the R-type factor analysis and the reliability analysis using the Chronbach's alpha coefficient. The former has a measure of sampling adequacy (MSA) that is sufficiently high and a total variance explained of approximately 80 and 90 percent for the set of independent and dependent variables, respectively. Additionally, all factor loadings can be observed to be above .5 in table 4 and 5, indicating that they are practically significant (Hair, Anderson, Tatham & Black, 1995)

Table 4
Factor analysis for the independent variables

Items	Factor 1	Factor 2	Factor 3
<u>Perceived Usefulness</u>			
Using the World Wide Web would enable me to accomplish shopping more quickly than using traditional stores.	0.797	0.347	0.151
Using World Wide Web would enhance my effectiveness in shopping or information seeking.	0.803	0.340	0.049
I would find the World Wide Web useful.	0.726	0.377	0.272
Web-based online transaction is advantageous.	0.871	0.107	0.009
<u>Perceived Ease of Use</u>			
I would find doing online shopping and web-based online transaction easy.	0.307	0.795	0.319
I would find interaction through web pages clear and understandable.	0.277	0.834	0.237
I would find it is easy to become skillful at navigating the web pages.	0.326	0.884	0.098
Overall, online shopping or transaction would be easy for me.	0.466	0.690	0.396
<u>Perceived Enjoyment</u>			
I dislike shopping.	0.158	0.119	0.818
I prefer someone else to do my shopping	0.075	0.207	0.824
Eigenvalue	5.767	1.296	1.812
Percentage Variance (78.972%)	36.296	24.951	17.724

MSA = 0.81, $\chi^2 = 175.99$, $p < 0.01$

Note: One item from PE was dropped due to low anti image correlation

Table 5
Factor analysis for the dependent variable

Variable	Loadings
I intend to use the Web (e.g. purchase a product or seek product information).	0.829
Using the World Wide Web for purchasing a product is something I would do.	0.934
I could see myself using the World Wide Web to buy a product.	0.933
Eigenvalue	2.43
Percentage Variance	89.90

MSA = 0.69, $\chi^2 = 47.07$, $p < 0.01$

7.2 Reliability Analyses

Since the calculation of reliability depends on unidimensionality, the measurement from various researchers as depicted in table 3 is assumed to have acceptable fit on a single factor. A note of caution is that reliability analysis does not ensure unidimensionality but merely presuppose its existence. Through theoretical justification and the constructs having been operationalized, Cronbach's Alpha was chosen to analyze the degree of consistency among the items in a construct. All the variables in this study meet the general rule of thumb of .70 (Hair et al., 1995).

Table 6
Reliability Analyses

Factors	No. of Items	No. of Items Dropped	α
Perceived Enjoyment	3	-	.82
Perceived usefulness	4	-	.89
Perceived ease of use	4	-	.90
Intention to shop online	3	-	.88

8.0 Analyses and Results

The descriptive statistics for the main variables in Table 7 revealed that all dimensions charted higher than the midpoints of their respective scales. It shows that respondents are generally optimistic about the perceived usefulness (PU) and ease of use (PEU) of Internet as a shopping medium. Additionally, perceived enjoyment was rated slightly lower than the technological acceptance dimensions of PEU and PU.

Table 7
Descriptive for the main variables

Variable	Mean	Standard deviation
Perceived Usefulness	3.63	0.86
Perceived Ease of Use	3.61	0.92
Perceived Enjoyment	3.46	1.21
Intention to use	3.60	1.03

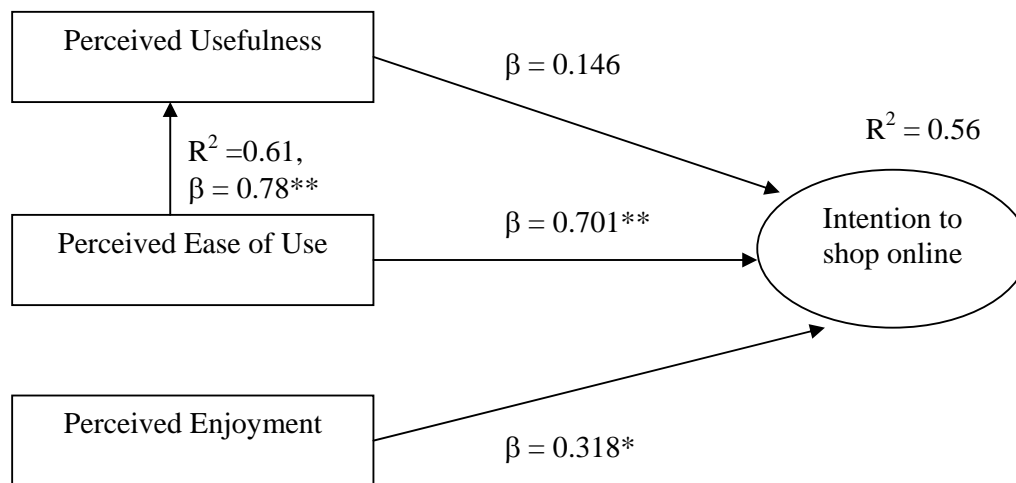
The Pearson product moment correlation in Table 8 suggested that all variables other than PEnj-PU are related to each other. In addition, the independent variables of PEU, PU and PEnj do not show any multicollinearity problems associated with them.

Table 8
Intercorrelations of the main variables

	PU	PEU	PEnj	Intention
Perceived Usefulness	1.000			
Perceived Ease of Use	.780**	1.000		
Perceived Enjoyment	.259	.333*	1.000	
Intention to use	.483**	.692***	.513**	1.000

*** p<0.01, ** p<0.05, * p<0.1

The concern of our model is whether the variables have an influenced as hypothesized. For this purpose, two multiple regression analyses (MRS) were conducted. The first MRA is used to analyze the relationship between PEU and PU and the second is between PEU, PU and PEnj with Intention to shop online. H1, H2 and H4 were found to be supported while H3 not supported. PEU accounted for approximately 61 per cent of the variance in PU, while PU, PEU and PEnj managed to explain 56 per cent of the variance in the Internet shopping intention. Additionally, the impact is such that PEU has the largest impact on intention to shop online, followed by perceived enjoyment and perceived usefulness.



** p<0.01, * p<0.05

Figure 3: The Results of the Relationships in the Research Model

9.0 Discussions and Conclusion

Perceived usefulness (PU) was not a significant factor in determining the intention to shop online. The notion that individuals are more influenced by the usefulness of the products instead of its ease of use had been challenged. This study believes that this surprising result is contingent upon variables such as the type of products. Online purchases are believed to be more common in familiar products (e.g. books, CDs), while shoppers still prefer conventional means for apparels and household items. This may be due to the fact that the former has a lower quality uncertainty that governs them, while the latter requires much personal interaction with the products.

On the other hand, perceived ease of use (PEU) and perceived enjoyment (PE_{en}) were found to have a positive influence on the online shopping intention. This suggests that the ease of use of the technology and the degree in which the shopper is satisfied with the online shopping experience are imperative in predicting the potential e-shopper's intent. Specifically, this study further contends that individuals would only purchase through the Internet if they find it to be "enjoyable in its own right" coupled with the ease of engaging in the mechanisms of the technology. This is supported by Ramayah, Jantan and Aafaqi (2003), in that perceived enjoyment was found to be related to the shopper's messaging, browsing and purchasing activities. More importantly, the greater impact of PEU than PU and PE_{en} suggests that the intention to shop online pivots on creating a web interface that is easy to be used.

Finally, PEU was found to be a lynchpin for perceived usefulness and intention to shop online.

10.0 Directions for Future Research

Despite the exploratory nature of this study, it managed to elucidate on the status quo of Malaysian Internet shopping through sufficient empirical research. The perception constructs of perceived ease of use and perceived usefulness have to be investigated in light of the type of products that are intended to be purchased by the Internet shopper. As a suggestion, items have to be segregated into their functions, in turn, allowing an index to be accorded to each of them based on the importance of both the perception constructs. Hence, an estimate can be known about the quantity of effect that is involved in each perception construct.

Future replications of this model might consider investigating the mediating effect of perceived usefulness on the relationship between perceived ease of use and intention to shop online relationship. External factors of product value, customer service and consumer risks should also be incorporated as antecedents into future replicated models. For instance, Madu and Madu (2002) streamlined e-quality dimensions into website performance, features, structures, aesthetics, reliability, storage capability, accountability, security, trust, responsiveness, product differentiation and customization, policies, reputation, assurance and empathy that can be regarded as external factors. Other external factors that could be examined are product information, customer service, purchase result and delivery, site design, purchasing process, product merchandizing, delivery time and charge, ease of use and additional information services (Cho & Park, 2002).

11.0 Managerial Implications

This study managed to provide potential retailers insights to meet their respective online shopping agenda. Firstly, for retailers who seek to venture into Internet retailing as an additional distribution channel, the purchasing medium (i.e. webpage) should be user friendly in its design. To begin with, transactional queries should be just sufficient to get the most important details of the purchase. Furthermore, graphics and animations should be limited in its use in promoting the website as it takes up too much memory space and slows down the online purchasing process. These would lead to increase in perceived enjoyment and PEU of the user, thus allowing the individual to respond favorably to online shopping. Since it is suspected that the degree of preference on Internet retailing varies across different products, the purchasing medium should classify the content and highlight the ones that are most likely to be purchased through online (e.g. books, CDs). Additionally, website content developers

should consider displaying only relevant details with appropriate fonts (including its size) and color combination. In other words, more efficient management of technology is essential in making Internet shopping an enjoyable experience. In short – keep it simple.

References

- Aladwani, A.M. (2002). The development of two tools for measuring the easiness and usefulness of transactional Web sites. *European Journal of Information Systems*, 11(3), 223-234.
- Agarwal, R., & Prasad, J. (1999). Are individual differences germane to the acceptance of new technologies?, *Decision Sciences*, 30(2), 361-391.
- Bell, G. & Gemmell, J. (1996). On ramp prospects for the information super highway dream. *Communications of the ACM*. 39 (6), 37.
- Bellenger, D.N. & Kargoankar, P.K. (1980). Profiling the recreational shopper. *Journal of Retailing*, 56 (3), 77-92.
- Bhiamani, A. (1996). Securing the commercial Internet. *Communications of the ACM*. 39 (6), 29-36.
- Brown, S. A., Massey, A. P., Montoya-Weiss, M. M. & Burkman, J. R. (2002). Do I really have to? User acceptance of mandated technology. *European Journal of Information Systems*, 11, 283-295
- Boston Consulting Group (2001). The multichannel consumer: The need to integrate online and offline channels in Europe, [online] at www.bcg.com/publications/files/MultichannelConsumer_summary.pdf
- Burke, R.R. (1998). Real shopping in a virtual store. In S.P. Bradley and R.L. Nolan (Eds) *Sense and Respond: Capturing the Value in the Network Era*. Harvard Business School:Boston.
- Chau, P.Y.K., & Hu, P.J. (2001). Information Technology Acceptance by Individual Professionals: A Model Comparison Approach, *Decision Sciences*, 32(4), 699-719.
- Cho, N. & Park, S. (2002). Development of electronic commerce user-consumer satisfaction index (ECUSI) for Internet shopping. *Industrial Management and Data Systems*, 101 (8), 400 – 405.
- Crisp, C. B., Jarvenpaa, S L. & Todd, P.A. (1997). Individual differences and internet shopping attitudes and intentions. Working paper, University of Texas at Austin, [online] at <http://ccwf.cc.utexas.edu/~crisp/indiv.Shop.htm>.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease Of Use, and User Acceptance of Information Technology, *MIS Quarterly*, 13, 983-1003.
- Davis, F. D., Bagozzi, R.P. & Warshaw, Paul R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1003.
- Donthu, N. & Garcia, A. (1999). The Internet shopper. *Journal of Advertising Research*, 39(3), 52-8.
- Euromonitor (2003). Internet retailing in the United States. *Euromonitor Country Report*.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: an introduction to theory and research*. Addison-Wesley, Reading, MA.
- Gefen, D. & Straub, D.W. (1997). Gender differences in the perception and use of e-mail: an extension to the technology acceptance model. *MIS Quarterly*, 21 (4), 389 – 400.
- Gehrt, K.C., Alpander, G.G. & Lawson, D.A. (1992). A factor-analytic examination of catalog shopping orientations in France. *Journal of EuroMarketing*, 2(2), 49-69.

- Hair, J.F., Anderson, R.E., Tatham, R.L. & Black, W.C. (1998). *Multivariate Data Analysis*. Ney Jersey: Prentice Hall.
- Horton, R.P., Buck, T., Waterson, P.E. & Clegg, C.W. (2001). Explaining Intranet Use the Technology Acceptance Model, *Journal of Information Technology*, 14, 237-49.
- Hu, P.J., Chau, P.Y.K., Sheng, O.R.L. & Tam, K. Y. (1999). Examining the technology acceptance model using physician prance of telemedicine. *Journal of Management Information Systems*, 16 (2), 91-112.
- Igbaria, M. (1993). User acceptance of microcomputer technology. *International Journal of Management Science*, 21 (1), 73-90.
- Igbaria, M., Gumaraes, T. & Gordon, B.D. (1995). Testing the determinants of microcomputer usage via a Structural Equation Model. *Journal of Management Information Systems*, 11 (4), 87-114.
- Jantan, M., Ramayah, T., & Chin, W.W. (2001). Personal Computer Acceptance by Small and Medium Companies Evidence from Malaysia, *Jurnal Manajemen & Bisnis*, 3(1), 1-14.
- Jarvenpaa, S.L. & Todd, P.A. (1997). Is there a future for retailing in the Internet? In R.A. Peterson (Ed) *Electronic Marketing and the Consumer*. Sage: Thousand Oaks, C.A.
- Koufaris, M. (2002). Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior. *Information Systems Research*, 13(2), 205-223.
- Legris, P., Ingham, J. & Collette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191-204.
- Lesser, J.A. & Hughes, M.A. (1986). Towards a typology of shoppers. *Business Horizons*, 29 (6), 56-62.
- Lombardo, H. (1999). Mimos Deploys 2.5 Gbps Backbone With Cisco Technology, [online] at www.internetnews.com/bus-news/article.php/180311
- Madu, C.N & Madu, A.A. (2002). Dimensions of e-quality. *International Journal of Quality and Reliability Management*, 19 (3), 246 – 258.
- Mathieson, K. (1991). Predicting user intentions: comparing the technology acceptance model with the theory of planned behavior, *Information Systems Research*, 2(3), 173-191.
- Mathieson, K., Peacock, E. and Chin, W. (2001). Extending the Technology Acceptance Model: The influence of perceived user resources. *The Database for Advances in Information Systems*. 32 (3).
- Moon, J. & Kim, Y. (2001). Extending the TAM for a World-Wide-Web context. *Information and Management*, 38, 217-230.
- Moore, G.C. & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research* 2 (3), 192 – 222.
- Panurach, P. (1996). Money and electronic commerce: digital cash, electronic funds transfer and e cash. *Communications of the ACM*. 39 (6), 45-50.
- Ramayah, T., Ignatius, J, & Aafaqi, B. (2004). PC Usage Among Students in a Private Institution of Higher Learning: The Moderating Role of Prior Experience, *Jurnal Bisnis Strategi* forthcoming.
- Ramayah & Jantan (2003). [Intention to Purchase through the World Wide Web \(WWW\): The Malaysian Experience](#). *The Third International Conference on Electronic Commerce Engineering (ICeCE2003)*, Hangzhou, China.
- Ramayah, T., Lam, S.C. & Sarkawi, F. (2003). Attitude and Intention to Use Web-based Supply Chain Management (SCM) among SME's. *Asia Pacific Seminar on E-*

- Customer Relationship Management*, Shah Alam, Selangor, Malaysia, 8-9 th July 2003.
- Ramayah, T., Jantan, M. & Aafaqi, B. (2003). Internet usage among students of Institutions of higher learning: The role of motivational variables. *The Proceedings of the 1st International Conference on Asian Academy of Applied Business Conference*, Sabah, Malaysia, 10-12th July, 2003.
- Ramayah, T., Dahlan, Tham, K. T. & Aafaqi, B. (2003). Perceived Web Security And Web-Based Online Transaction Intent. *Multimedia Cyberscape Journal*, 1, 131-141.
- Ramayah, T., Ma'ruf, J.J., Jantan, M., & Osman, M. (2002). Technology Acceptance Model: is it applicable to users and non users of internet banking. The proceedings of The International Seminar, Indonesia-Malaysia, The role of Harmonization of Economics and Business Discipline in Global Competitiveness, Banda Aceh, Indonesia.
- Reid, R & Brown, S. (1996). I hate shopping! An introspective perspective. *International Journal of Retail and Distribution Management*. 24(4), 4-16.
- Rowley, J. (1996). Retailing and shopping on the Internet. *International Journal of Retail & Distribution Management*. 24 (3), 26-37.
- Shim, S. & Mahoney, M.Y. (1992). The elderly mail-order catalog user of fashion products: a profile of the heavy purchaser. *Journal of Direct Marketing*, 6 (1), 49-58.
- Stephenson, P.R. & Willett, R.P. (1969). Analysis of consumers' retail patronage strategies. In P.R. McDonald (Ed.) *Marketing Involvement in Society and the Economy*, American Marketing Association, Chicago, IL.
- Taylor Nelson Sofres (2002). Interactive Global eCommerce Report 2002, [online] at <http://www.tnsofres.com/ger2002>
- Teo, T.S.H & Lim, R.Y.C. (1999). Intrinsic and extrinsic motivation in Internet usage. *OMEGA: International Journal of management Science*, 27, 25-37.
- Ndubisi, N.O., Jantan, M., & Richardson, S. (2001). Is the technology acceptance model valid for entrepreneurs? model testing and examining usage determinants, *Asian Academy of Management Journal*, 6(2), 31-54.
- Kwasi, A-G. & Salam, A.F. (2004). [An extension of the technology acceptance model in an ERP implementation environment](#). *Information & Management*, 41 (6), 731-745.
- Kleijnen, M., Wetzels, M. & De Ruyter, K. (2004). [Consumer acceptance of wireless finance](#). *Journal of Financial Services Marketing*. 8(3), 206-217.
- Warshaw, P. R., & Davis, F. D. (1985). Disentangling behavioral intention and behavioral expectation. *Journal of Experimental Social Psychology*, 21, 213-228.
- Yi Shun, W., Yu-Min, W.K.P., Hsin-Hui, L. & Tzung-I, T. (2003). Determinants of user acceptance of Internet banking: an empirical study. [International Journal of Service Industry Management](#), 14(5), 501-519.
- Venkatesh, V. & Davis, F. D. (1996). A Model of the Antecedents of Perceived Ease of Use: Development and Test, *Decision Sciences*, 27 (3), 451-481.
- Venkatesh, V. & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, 46 (2), 186-204.
- Venkatesh, V. & Morris, M. (2000). Why don't men ever stop to ask for directions? Gender, social influence and their role in technology acceptance and usage behaviour. *MIS Quarterly*, 24(1), 115-139.