Internet Users' Behaviour and Adoption in Purchasing Products and Services via Virtual Storefront: Malaysia's Perspectives

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Abstract

The rapid adoption of the Internet as a commercial tool has resulted in firms trying to do business in innovative ways of marketing in computer-mediated environments (Hoffman et al. 1997). This study therefore, focuses on providing a deeper insight into the Malaysian Internet users' behaviour and adoption of online shopping. The current study found that Malaysian Internet users who have just experienced browsing the Internet for just one year prior are also attracted to conduct online shopping due to the reliability of the products or services offered online. These factors appear to affect emerging trends of Electronic Commerce in Malaysia.

Introduction

Electronic Commerce (E-Commerce) has revolutionised the way companies do business, as well as the way consumers and customers purchase and consume products and services, especially online shopping activities. In many countries where Electronic Commerce has been implemented, online shopping has become an important factor in commerce transactions (Starkey 1998). Indeed, Hetherington (1996) perceived that E-Commerce has the potential to reshape the world of shopping in the near future. Malaysia

needs to take this opportunity and reacts fast in order to be an active participant in the emerging electronic world. However, little information is known about Malaysian Internet users' behaviour and adoption with respect to online shopping. This lack of knowledge creates a need for the current study to examine Internet users' behaviour and adoption of online shopping, particularly in respect of Malaysia.

Literature Review

The tremendous growth of the Internet, particularly after the diffusion of World Wide Web technologies, leads to a critical mass of the consumers and the firms participating in a global online marketplace (Hoffman et al. 1997). Internet based technologies allow merchants to attract consumers with appealing virtual store outlays and also permit interactivity. The present popularity of the World Wide Web as an interface for commercial applications (in contrast to other Internet networks) is due to its ability to enable global sharing of information and resources, and its potential to provide an efficient channel for advertising, marketing, and even direct distribution of certain goods and information services (Hoffman et al. 1997).

Shopping on the Internet is the new way of doing things and entails a process of trying and evaluating something novel, an innovation. According to Lohse and Spiller (1998), "there are large differences between a physical store and its electronic counterpart" where customers are provided with a completely new and innovative shopping experience. The Internet constitutes an innovative mean of interacting with customers and it has revolutionising the ways in which products and services are marketed to customers. With this benefit, customers can have an innovative shopping experience when purchasing products or services through the Internet.

The Internet has expanded the individual access to information and has exercised a homogenising influence on large parts of the world (Backer & Groenne 1996). According to the Scarborough Research (2000), 41% of America's Internet Shoppers spent between US\$100 and US\$499 on Internet purchases in 2000. 17% spent between US\$500 and US\$999 over the Internet, and 16% purchased more than US\$1,000 worth of goods and services online.

Moreover, according to Taylor Nelson Sofres (2001) USA retains its position as the nation with the greatest proportion of Internet Shoppers at 33% of all Internet users in 2001. This is compared to the global average of 15%. In India, Philippines, Thailand and Turkey, 2% or less of the online population shop online.

Within Malaysian context, a study by M.O.G Sdn. Bhd. (Mail Order Gallery) and Beta Interactive Services conducted in 1996 found that about 34% of the respondents purchased products via the Internet and the majority paid for their purchases with credit cards. This proportion rose by 6% in 2001 based on the study by Norazah (2001) on "Malaysian Internet users adoption and behaviour on shopping online". They were considered as innovative consumers. Why is there greater portion of consumers decided to purchase products through traditional shop-

ping as compared to the Internet? The reason could be that it is not the technology but the way consumers feel about high-tech purchasing that is holding back development of the field (Reda 1995). Consumers are much concerned about their privacy, and are uncomfortable when giving credit card number online because a perceived "under carpet transaction". The fear here is that personal information that the Internet shoppers key in may be shared with other Internet sellers without their consent including Internet sellers selling information to other people. Furthermore, there is also a fear that Internet sellers may overcharge from consumers' credit card. There has also been a tendency for Internet sellers sending unwanted promotional information to users using Internet users' personal information (Norazah 2001).

Besides that, common barriers that have been identified as reasons for not shopping by catalogue or online are a preference for seeing the product before purchase, a lack of trust in the medium, and a reluctance to wait for delivery (Phau & Poon (2000). Both distribution methods have been said to experience significant problems in coping with returned goods, a problem compounded by international sales, where there may be difficulty in reclaiming taxes (Gupta 1995). Authentication comes to be very important to the diffusion of online shopping because the sellers and consumers cannot physically watch or talk to one another anymore. Jones and Biasiotto (1999) concluded that as the above-mentioned issues are addressed, consumer acceptance would accelerate over the next five years. Therefore, from the above, it is evident that the need exists to gauge the intentions of consumers with regard to shopping online. Hence, it is imperative that marketers understand the depth of consumer acceptance or their intentions for this medium of retailing.

Access to a greater diversity of informa-



tion with very fast, almost instantaneous access times (less than ten seconds) over the Internet is an important consumer benefit associated with shopping on the Internet (Bell & Tang 1998; Hoffman et al. 1998). Consumers are able to initiate and control non-linear searches, due to the interactive nature of the Internet and the hypertext environment. Easy access to an abundance of current and detailed information on products and services facilitates comparison shopping, aid in product selection and enables consumers to make more informed decisions (Hoffman et al. 1998). However, they favour sites which are regularly updated, well organised, and easy to read, among other characteristics (King 1996; Nielsen 1996). In fact, there are also no driving or parking costs associated with shopping online. Almost all products will be delivered to the consumers, either instantaneously via the electronic medium or by the wide distribution network of the Internet vendors.

In addition, for certain intangible products or services (e.g. computer software), the Internet can provide instant gratification and accelerate distribution. The Internet can also reduce transaction costs to consumers by providing direct access to a multitude of product or service providers as well as eliminating time and spatial barriers (Aldridge et al. 1997).

Methodology

The current study explores the buying behaviour and adoption of a sample Malaysian Internet Users' targeted at Business to Consumer (B to C) market segment. The respondents involved in this research study were selected from the population with the condition of having had experience in browsing or purchasing through the Internet (does not specify numbers of years using the Internet). In other words, this is known to be

the measurement of Malaysian consumers' Internet experience in shopping online. They were drawn from different occupational categories, education, age, gender or ethnic categories but all of them fulfilled the basic condition mentioned earlier.

There were 579 randomly selected respondents in this research study, out of which 334 were "Male" and the balance were "Female". They were selected from the states of Penang, Kuala Lumpur, and Selangor in Malaysia. The majority of respondents (472) falls in the age group of "less than 30 years old", were mostly Malays, earned a salary of "less than RM 3,000" per month and work/ study in "Selangor" (Please refer Appendix 1).

The collection of data was carried out by using self-administered questionnaire in order to determine the extent of Internet users' behaviour and adoption of shopping online. The data was analysed using statistical tools such as Cross tabulation available in the Statistical Package for Social Sciences Version 10.0 (SPSS 10.0) computer software.

Data Analyses & Discussions

Total respondents of the current study (i.e. 579 respondents) are categorised into two groups: (i) **Internet Shoppers**; that is those who have purchased products or services through the Internet (i.e. 229 respondents), and (ii) **Non Internet Shoppers**; that is those who have yet to purchase products or services through the Internet (i.e. 350 respondents); but are browsers and considered as potential consumers to purchase the goods via the Internet in the near future. These two categories were further cross-tabulated with respondents' online shopping behaviour and adoption.

This section focuses on the aspects of Internet/Non Internet Shopper behaviour with several variables of Internet usage such as years of using Internet, Internet access speed, and possessing a credit card. Furthermore, it discusses aspects of what products are purchased through the Internet, method of payment and hours spent per day on the Internet to purchase products online. Discussed also are aspects of frequency of placing an order, price of an item purchased per transaction (RM), maximum amount of money spent for future purchasing (RM), and delivery service per purchased item (days). The results are given as follows.

Table 1
Internet/Non Internet Shapper vs. Years
of Usage on the Internet

Years of usage on	Internet Shopper		Non Internet Shopper	
the Internet	Frequency	%	Frequency	%
< 2 years	40	7.0	64	11.1
2-3 years	33	5.7	54	9.3
3-4 years	54	9.3	85	14.7
> 4 years	102	17.6	147	25.4

With regards to respondents' years of using the Internet, results showed that among the Internet Shoppers, most of the respondents (102) had been using Internet for "more than four years" while 54 respondents had been using Internet for a period of "three to four years". There were 40 respondents who had been using Internet for "less than two years", and the balance of 33 respondents had been using Internet for "two to three years". However, this figure was different among Non Internet Shoppers, where 147 respondents had been using the Internet for "more than four years", 85 respondents had been using the Internet for "three to four years". 64 respondents had been using it for "less than two years", and the balance of 54 for "two to three years.

Based on the 0.05 level of significance at 3 degrees of freedom, the critical value of the chi-square statistic is 7.815, but the calculated chi-square value is 0.384, which is below the critical value. Hence the null hypothesis is accepted. Otherwise, it concludes that no association between Internet/Non Internet Shopper, and years of usage on Internet is accepted. Internet users' decision to conduct shopping online is not influenced by the number of years of access or experience browsing the Internet, but due to other factors.

Table 2 Internet/Non Internet Shopper vs. Internet Access Speed (kbps)

Internet access speed (kbps)	Internet Shopper		Non Internet Shopper	
	Frequency	%	Frequency	%
< 9.6	6	1.0	17	2.9
14.4	16	2.8	19	3.3
28.8	41	7.1	52	9.0
33.6	15	2.6	33	5.7
56	96	16.6	156	26.9
ISDN	44	7.6	54	9.3
T-1	11	1.9	19	3.3

Chi-square = 5.983

Sig. value = 0.425

Meanwhile, in terms of Internet access speed, 96 respondents (17%) among Internet Shoppers and 156 respondents (27%) among Non Internet Shoppers were using computers with Internet access speed of "56 kilobits per second (kbps)". This is followed by 44 (8%) respondents among Internet Shoppers and 54 (9%) respondents among Non Internet Shoppers who used Internet access speed of "ISDN". With respect to Internet access speed of "28.8 kbps", there were 41 respon-



dents among Internet Shoppers and 52 respondents among Non Internet Shoppers who were using this particular connection. In fact, 11 respondents among Internet Shoppers and 19 respondents among Non Internet Shoppers were using the fastest Internet access speed of "T-1" (Table 2).

At the significant level of 0.05 with 6 degrees of freedom, the critical value of the chi-square statistic is12.592 but the calculated chi-square value is only 5.983. Thus, the null hypothesis is accepted, indicating that there is no significant association between Internet/Non Internet Shopper and the seven different types of Internet access speed. In reality, more highly educated Internet users prefer more Internet access using T1 lines because they can enjoy wider and in-depth search of information online.

Table 3
Internet/Non Internet Shapper vs. Holding a
Credit Card

Holding a credit card	Internet Shopper		Non Internet Shopper	
	Frequency	%	Frequency	%
< 9.6	6	1.0	17	2.9
Yes	162	28	121	20.9
No	67	11.6	229	39.6

Chi-square = 72.481

Sig. value = 0.000

From the survey conducted, more Internet Shoppers (i.e. 162 respondents) were "holding credit cards" than Non Internet Shoppers (i.e. 121 respondents). However, there were 67 respondents among Internet Shoppers and 229 respondents among Non Internet Shoppers who "do not posses any credit card" (Table 3). As can be seen in the same table, the null hypothesis of no association is rejected at the 0.05 level of significance, as the calculated chi-square value of

72.481 is higher than the critical value of the chi-square statistic at 1 degree of freedom of 3.841. This implies that there is evidence of a difference between Internet/Non Internet Shopper and credit card ownership. Majority of the Internet Shoppers conveniently shop online, especially when they own credit cards. They enjoy the benefits of online shopping such as access to wider information and offerings of various Internet sellers.

The following page discusses the Malaysian consumers' usage of the Internet, which primarily focuses on Internet Shopper group:

Table 4
Internet Shopper vs. Product Purchased through
the Internet for past 12 Months

Products purchased through the Internet for past 12 months	Internet Shopper		
	Frequency	%	
Books/Journal/Magazines	104	18.0	
Home appliances	8	1.4	
Reservation service	35	6.0	
Apparel	8	1.4	
CD/Software	52	9.0	
Others	22	3.8	
Chi-square = 442.522	Sig. value = 0.00		

The results derived from Table 4 showed that most of the respondents (i.e. 18%) had bought online in the previous year and "books or journals or magazines" tend to top their shopping lists. Furthermore, eight respondents had purchased "home appliances" and "apparel" through the Internet while 35 respondents had placed "online reservation" for example hotel and flights reservation. Meanwhile, 52 respondents (9%) enjoyed purchasing "CD or software" online past 12 months.

Significant association was found at 0.05

confidence level with 5 degrees of freedom when the critical value of the chi-square statistic of 11.071 is lesser than the calculated chi-square value of 442.522. Thus, the null hypothesis is rejected, indicating that there is association between Internet Shopper and types of products purchased through the Internet for the past 12 months. The research suggests that most of the Internet Shoppers are students such as undergraduates and postgraduates, and they tend to purchase research related items such as books, journals, and magazines through the Internet.

Table 5
Internet Shopper vs. Method of Payment

M.1. 1 C	Internet Shopper		
Method of payment	Frequency	%	
Credit cards	177	30.6	
Money orders	18	3.1	
Bank drafts	10	1.7	
Cheques	6	1	
Others	18	3.1	

Chi-square = 429.713 Sig. value = 0.000

The survey shows that most Internet Shoppers, 177 (31%) used "credit cards" as the mode of payment for online purchases. However, 18 respondents preferred using "money orders" while 10 respondents used "bank drafts" for online payment. There was a small number of respondents (6) who used "cheques" for online payment (Table 5).

The calculated test statistic of the chisquare of 429.713 is greater than the critical value of 9.488 (with 4 degrees of freedom at the alpha equal to 0.05 level of significant). Hence, the null hypothesis, that rows and columns are independent, is rejected. There is sufficient evidence to reject the null hypothesis and to conclude that Internet Shoppers perceived the five different methods of payment differently. The evident is that most of the Internet Shoppers preferred to use a credit card as a means of payment for products purchased online, due to the assurance given by Internet sellers of not misusing customers personal and financial data, which is clearly stated in company's portal terms and conditions.

Table 6
Internet Shopper vs. Hours Spent Daily over the
Internet for Personal Purchasing

Hours spent daily over the Internet for personal purchasing	Internet Shopper		
	Frequency	%	
(*)	< 1 hour	129	22.3
	1 - 2	61	10.5
	2 - 3	23	4.0
	> 3	16	2.8
Chi-squ	are = 27.623	Sig. value	= 0.000

Additionally, when respondents were asked about hours spent per day over the Internet for personal purchasing, most of the Internet Shoppers (129) had spent "less than one hour" daily on the Internet, whereas, 61 respondents had spent "one to two hours" per day for the same purpose. Furthermore, only 23 respondents had browsed the Internet within "two to three hours" daily for personal purchasing, and another 16 respondents had spent "more than three hours" on the Internet for the same purpose (Please refer Table 6).

To explain the association between the two variables in greater detail, a chi-square test was conducted and it was found that the calculated chi-square value is 27.623. By comparing this value with the critical value of the chi-square statistic of 7.815 (with 3 degrees of freedom at 0.05 significant level), the null



hypothesis of no association is rejected, since the calculated value is much greater than the critical value. Thus, the alternative hypothesis that there is a significant association between Internet Shopper and hours spent daily on the Internet is accepted. Internet Shopper enjoy spending most of their time (i.e. more than three hours a day) browsing the Internet for personal purchasing purpose, they doing so for the reason to do comparison of the Internet sellers' competitive products prices, in order to obtained the maximum level of satisfaction for products purchased online. Therefore, more time is spent to shop online, and less time is spent to search for and buy products in the traditional way such as malls.

Table 7
Internet Shopper vs. Frequency of Placing Order over the Internet the past 12 Months

Frequency of placing order over the Internet for past 12 months	Internet Shopper		
	Frequency	%	
1 time	117	20.2	
2 times	64	11.0	
3 times	17	2.9	
4 times	12	2.1	
> 4 times	19	3.3	
Chi-square = 265.46	Sig. value = 0.00		

From the results obtained, 117 users among Internet Shoppers had purchased products or services through the Internet just "once" a year. Moreover, 64 respondents had placed orders "twice" through the Internet in a year, whereas only 19 respondents had placed orders through the Internet for "more than four times" within a year. There were also 17 respondents who had placed orders online "thrice" a year, and a small number of respondents (12) had placed orders "four

times" a year (Table 7).

Using the level of significance of 0.05, significant association was found between Internet Shopper and frequency of placing order over the Internet past 12 months. It was found when the calculated value of the chi-square of 265.461 is higher than the critical value of 9.488 at 4 degrees of freedom, the result rejects the null hypothesis. The rejection decision indicates that there is an association between Internet Shopper and frequency of placing orders over the Internet. Internet Shoppers who have conducted repeat purchases of products purchased online, that is, place order more than four times past 12 months, are motivated to do so due to the Internet benefits like timely products delivery, worldwide product availability and accessibility as well as the convenience of online payment system.

Table 8
Internet Shopper vs. Price of Item Purchased per
Transaction (RM)

Price of item purchased	Internet Shopper		
per transaction (RM)	Frequency	%	
< RM 50	60	10.4	
RM 50 - RM 100	87	15.0	
RM 100 - RM 300	12	2.1	
RM 300 - RM 500	54	9.3	
>RM 500	16	2.8	

Chi-square = 268.266 Sig. v

Sig. value = 0.000

According to the survey, the majority of the Internet Shoppers (87 respondents) had spent between "RM 50 to RM 100" per item when they purchased online. Furthermore, there were 60 respondents who had purchased products priced "RM 50 and below" online. In fact, there were 66 respondents who had spent between "RM 100 to RM

500" for a single item through the Internet. Another 16 respondents had purchased items through the Internet with the price value of "more than RM 500" (Table 8).

At the 0.05 level of significance with 4 degrees of freedom, the critical value of the chi-square statistics is 9.488, but the calculated chi-square value is 268.266, which is more than the critical value. Thus, the null hypothesis is rejected, indicating that there is an association between Internet Shoppers and price of item purchased through the Internet. The current study shows that 15% of Internet Shoppers enjoy purchasing products priced between RM 50 to RM 100 because the price is considerably affordable. Internet Shoppers who are highly price sensitive, will actively search for and buy products on the Internet in order to obtain lower prices of products.

Table 9
Internet Shopper vs. Maximum Amount of Money
Spent for Future Purchasing (RM)

Maximum amount of	Internet Shopper	
money spent for future purchasing (RM)	Frequency	%
< RM 500	124	21.4
RM 500 - RM 1,000	53	9.1
RM 1,000 - RM 3,000	32	5.5
RM3,000 - RM 5,000	10	1.7
> RM 5,000	10	1.7

Chi-square = 247.726 Sig. value = 0.000

The current survey found that the majority of the Internet Shoppers (124) stated the maximum amount of money they were willing to spend in the near future, which was "less than RM 500" for online shopping; compared to 53 respondents who were willing to spend within "RM 500 to RM 1,000" for products purchased. It is forecasted that a small num-

ber of respondents (32) will spend between "RM 1,000 to RM 3,000" in the future on online shopping, and for another 10 respondents, each will be willing to spend between "RM 3,000 to RM 5,000" or "more than RM 5,000" to purchase products through the Internet (Table 9).

With 4 degrees of freedom and 95% significance level, the critical value of the chisquare statistic is 9.488 which is much lower than the calculated chi-square value of 247.726. Therefore, the null hypothesis (that rows and columns are independent) is rejected, indicating that there is an association between Internet Shoppers and the maximum amount of money spent for future online shopping. Generally, the current study found that Malaysian Internet Shoppers are willing to conduct a repeat purchase for items, which cost less than RM 500, such as low risks items like fragrance, online journals and magazines.

Table 10 Internet Shopper vs. Delivery Service per Purchased Item (days)

Delivery service per	Internet Sh	Internet Shopper		
purchased item (day)	Frequency	%		
< 7 days	70	12.1		
7 days	52	9.0		
14 days	63	10.9		
21 days	16	2.8		
> 21 days	28	4.8		

Chi-square = 242.887 Sig. value = 0.000

In addition, when purchasing products or services through the Internet, a small number of respondents (16) among Internet Shoppers, had received the products purchased "within 21 days". In fact, there were 28 respondents who were given service delivery



of "more than 21 days" from the date of ordering. 52 respondents received their products purchased online "within seven days", while 63 respondents received them "within 14 days" period from date of ordering. However, most of the respondents surveyed (70) were given delivery service for the products or services purchased online "less than seven days" from the date of ordering (Table 10).

At the 0.05 significance level, the calculated chi-square value of 242.887 exceeds the critical value of the chi-square statistic, with 4 degrees of freedom of 9.488. The conclusion is that, the null hypothesis is rejected, indicating there is evidence of an association between Internet Shoppers and delivery service received. Interestingly, most of the Internet Shoppers experienced the timely delivery of products ordered online (for example, received products less than seven days from the ordering date) when purchased digital and research related products like CDs, software, and online journals. Thus, when Internet Shoppers' delivery is consistent with their early expectation, they could experience higher level of satisfaction, thus more repeat purchases and referrals will be created in the near future.

Conclusion

In conclusion, the relationship between Internet/Non Internet Shopper and years of usage on the Internet, and also between Internet/Non Internet Shopper and Internet access speed was found to be insignificant at 0.05 significance level. The remaining variables were significant at level 0.05 [such as holding credit card, products purchased through the Internet in the previous year, methods of payment, hours spent daily over the Internet for personal purchasing, frequency of placing orders over the Internet

yearly, price of items purchased per transaction (RM), maximum amount of money spent for future purchasing (RM), and delivery service per purchased item (days)].

A further inquiry revealed that new ideas on Malaysian Internet users' online shopping behavioural pattern were found to be significant when compared with most of the other Internet usage variables. For example, Internet Shoppers who own a credit card enjoyed purchasing books/journals/magazines through the Internet, especially books at the price of less than RM 100 per item and at the same time perceived that their level of satisfaction was higher for the item purchased through online. In most of the cases, the delivery was also made within seven days from the date of order. They reported that they mostly settled their online payments using credit card. With the benefits stated above, their frequency of purchasing products through Internet was considerably more. Also, they purchased products just once a year but reported they intended to conduct repeat purchases in the near future and with a maximum amount expenditure less than RM 500 per transaction. They also reported they enjoyed browsing the Internet for "less than three hours a day" for personal purchasing reasons.

Interestingly, the current study identified that online shopping decision making by Internet/Non Internet Shoppers is not significantly affected by other factors such as access speed for Internet connection and the number of years of usage on the Internet. The Internet users' who have just experienced browsing the Internet for just one year prior and using only 32 (KBPS) access speed were also attracted to conduct online shopping. They were attracted to the Internet "pull" factors such as user friendliness and reliability of the products or services offered through the Internet. Because the success of new retail formats will depend heavily on consumers,

future research should continue to study the consumer perspective towards new and emerging retail formats.

Besides that, awareness is another key to increase and improve consumer (i.e. Non Internet Shoppers) confidence of security safeguards such as presenting credit card numbers and passwords online. If they are in fully prepared condition and known about the security features in advance before making any online purchases, then it would encourage significantly more referrals and online repeat purchases in the near future as well as willingness to purchase products or services at a higher price.

Appendix

Internet Users' General Demographics

	Results	
	Frequency	%
Gender		
Male	334	57.7
Female	245	42.3
Age		
< 20	79	13.6
20 – 30	393	67.9
30 - 40	81	14.0
40 - 50	21	3.6
50 - 60	5	0.9
> 60		
Ethnicity		
Malay	356	61.5
Chinese	150	25.9
Indian	55	9.5
Others	18	3.1
Present Occupation		
Student	242	41.8
Professional	204	35.2
Businessman	42	7.6
Government Servant	41	7.1
Others	50	8.6
Highest Education Level		
SPM Holder	89	15.4
STPM / Diploma	134	23.1
Certificate	32	5.5
Degree	251	43.4
Postgraduate	63	10.9
Others	10	1.7
Monthly Income		
< RM 1,000	215	37.1
RM 1,000 - RM 3,000	147	25.4
RM 3,000 - RM 5,000	115	19.9
> RM 5,000	102	17.6
Workplace		
Penang	161	27.8
Selangor	241	41.6
K. Lumpur	177	30.6



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