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Winter 12-5-2004

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Internet Shopping Behavior among Singaporeans: Gender and Educational Issues

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ABSTRACT

The key objective of this study is to examine the influence of gender and educational level on attitudes toward online shopping. Based on a sample of 140 respondents, it was found that there is a general consensus over the convenience of the medium for information search and making purchase. Singaporeans are in general concerned with Internet privacy and security. Gender differences have a significant effect on the way respondents feel comfortable with not having the 'real' shopping experience. Both male and female respondents feel that it is easy to conduct online shopping and they generally encounter minimal problem. Finally, the perception of the Internet providing better prices and more cost savings increases with the level of education.

Keywords: Internet shopping, Online shopping, Net shoppers

1. INTRODUCTION

With the rapid advancement of new technology, all commercial activities including the retailing are affected in one way or another (Shaw, Gardner and Thomas, 1997). These changes not only create risks but also opportunities. The revolution is shaping the business world and at the same time pushing the US toward an information-based economy. In fact, the rate of technological change is so rapid that it will affect almost every aspect of how businesses are conducted. Singapore, being a small dot in the world map, is not spared.

Phau & Sui (2000) estimated that the population of Singaporean Internet shoppers to be 460,000 individuals in year 2000. This is a substantial figure given that the total population of Singapore is around four million people. The figures simply indicate that there are abundant opportunities for marketing managers who want to be a part of this growing market.

As such, understanding the attitudes, perceptions and behavior of the Singaporean Internet shopper allows the marketing professionals to efficiently target their marketing efforts. Furthermore, it also allows the marketing managers to better understand the concerns/fears of the Singaporean Internet shopper and subsequently work to address their demands and expectations. This will encourage more shoppers to shop over the Internet. This study aims to investigate the effects of gender and educational level on the attitudes of Singaporeans towards Internet shopping.

2. LITERATURE REVIEW

Before the age of the Internet, there have been many technological advances that influenced the operations of business transactions. The most recent technological advancement is the onset of Internet technology that

has transformed the entire business market place (Shaw, Gardner and Thomas 1997). Schwartz (1997) compared the way the Internet has changed the rules of business to the way automatic teller machines have transformed the customer's banking experience. The basis of comparison is that the customers are more comfortable doing things themselves with the ease, speed and convenience that Internet technology provides. In addition, the purchase of software over the Internet, sends the product directly into the buyer's computer and removes the olden day hassle of going to a shop, purchase the software and coming home to install it into the computer.

One of the clear advantages of shopping over the Internet is the fact that an online store does not incur the costs that a traditional store would incur. Thus costs like labor, fittings, rent and utilities are no longer relevant to an online store. As a result, products and services sold online can be priced at a cheaper rate (Lawrence, Corbitt, Tidwell, Fisher, Lawrence 1998).

There are several factors that are driving the progress of e-commerce, one of them being the increasing number of experienced users. When studying Internet shopping behavior, the familiarity of each user towards using the Internet has to be taken into consideration. Factors such as time spent on the Internet, the usage of Internet at work and the level of education all affect an individual's exposure and experience to Internet usage.

The Internet is also increasingly being used as a Customer Relationship Management (CRM) tool. CRM is not just another software or new technology but rather it deals with a more fundamental issue – unique customer needs (Geller 2002). Technology such as database management systems, using the Internet as a medium, has allowed marketers to pinpoint the individual preferences of each consumer and target

their marketing efforts in a way that appeals to the intended recipients and excludes the unintended ones.

Similar to any other innovation, companies that decide to use the Internet for marketing their offerings will need to meet or exceed the expectations of their customers to increase the likelihood of success. To this end, there are some important problems concerning the Internet's perceived security, competitiveness, impersonality and convenience that may affect the success of the companies marketing their products or services on-line.

One of the issues that consumer behaviorists have studied is the effect of time pressure on customer purchases. Research has shown that the likelihood of deferring the purchase is correlated to the effects of the pressure to make a decision in a given time as well as the type of product concerned (Dhar & Nowlis 1999). This study therefore aims to find out if time pressure affects the Internet shopper in the same way, given that while shopping over the Internet is 24hrs and in the comfort of the shopper's home environment.

Bell and Bucklin (1999) found that purchase decisions are based on the "Internal Reference Points", mainly past experience with a particular brand and product familiarity. Srivastava and Luire (2001) found that when search costs are low, the number of stores searched increases. On the other hand, if search costs are high, the consumers tend to accept the price-matching signal at face value and search less in the presence of a refund. It is thus appropriate to find out to what extent Internet shoppers value the low search costs and subsequently how that affects their buying behavior online.

One of the principle fears that consumers are facing when they are buying online concerns security and privacy (Bush, Bush and Harris 1998). The main fears relate to the possibility of the transaction intercepted by someone else (and therefore the personal particulars can be manipulated by a third party) as well as bogus or dishonest online vendor who fails to deliver the product and absconds or abuses the credit card particulars.

The effect of gender on Internet shopping is also a factor that is worth studying. Females have always been associated with a higher propensity to shop but it is the males that are found to be more involved with computer technology (Costa 1994). Internet shopping encompasses both shopping and technology and this study therefore aim to ascertain if there is a difference in attitudes between males and females towards this area. Alreck and Settle (2002) conducted a study in the U.S. and found no significant difference between the attitudes of both the male and female towards online shopping.

Another important demographic factor that is commonly used in predicting consumer attitudes is educational level. Research on this factor towards online shopping has not been particularly developed. This is probably due to the fact that the majority of the previous studies drew samples from website based surveys, thus eliciting self motivated responses from a demographically homogenous sample. In one particular census carried out in Helsinki, it was found that the higher a person's level of education, the more likely he/she uses the Internet for shopping (Statistics Finland 2002).

3. RESEARCH METHODOLOGY

In order to collect a random sample that would likely represent the population of Internet shoppers in Singapore, the island was classified into north, east, west and central areas. Four Mass Rapid Transit (MRT) train stations were randomly selected as target areas to conduct our survey. They are Yishun (north), Tampines (east), Boon Lay (west), and Raffles Place (central). A total of 140 surveys were collected from these four locations and the number collected from each location was equally distributed (35 surveys per MRT station). The survey was conducted at the main door of each MRT station and every 20th person was approached to participate in the survey. The collection of data was done over a period of four days (one station per day) between 1700-1900hrs. The reason for selecting this time frame was solely because of the higher pedestrian traffic during this period.

Respondents were required to complete a short (3 minutes) questionnaire that solicited their views on different aspects of Internet shopping, together with basic demographic information. The survey instrument consists of two sections. The first section comprises of twenty-eight 5-point Likert statements and the second section includes the demographic background. The construct of the questionnaire was designed to determine gender and educational level influences on a person's attitudes toward online purchase.

There are altogether 28 questions (attributes). Factor analysis was first conducted on these attributes to reduce their number to a more manageable size. Principal component analysis was used to extract the related factors first before the varimax rotation was used to further rotate for easy interpretations. Five factors were extracted. The factor scores were then used for analysis against the variables gender and educational levels in a 2-way ANOVA.

4. ANALYSIS AND FINDINGS

Of the 140 surveys that were conducted, 71 of them were males and 61 were females. Educational level was classified into 3 categories - Others, Intermediate and Upper. "Others" consists of those respondents with

up to secondary school level. The “Intermediate” category includes respondents having education up to junior college or diploma. Respondents who have a degree (or above) are classified under the “Upper” category.

There were 24 males (33.8%) who fell under the “Others” category, 35 (49.3%) fell under the “Intermediate” category and 10 (14.1%) in the “Upper” category. Six out of ten female respondents fell under the “Intermediate” category. There were only 12 (17.4%) and 14 (20.3%) who fell into the “Others” and “Upper” category respectively.

Of the 140 respondents, only 18 (12.9%) do not have Internet connection. 33 of the Internet users have bought online previously (14 male and 18 female). It was also found that majority of the male purchasers bought either software or multimedia products online. Online purchases of books and tickets were more prevalent amongst the females.

Results of Factor Analysis

To reduce the 28 questions to a more manageable size, factor analysis was used to identify the key factors included in this study. The number of factors is obtained from a scree plot which shows that only 5 factors have eigenvalue of 1 or higher. The total variance explained by these five factors is 72.5 percent.

Factor 1 comprises of five questions which are related to the issue of convenience in using the Internet for shopping and so it is named as “convenience” and its variance is 16.26 percent. Factor 2 comprises of five questions relating to “security concerns” such as “confident in giving out personal particulars” and “technology reliability” and the variance of this factor is 15.96 percent. Factor 3 involves those questions that deal with “personality” (variance = 15.78 percent). Factor 4 comprises of five questions which are concerned with whether it is easy to use the Internet for shopping. The factor is named as “user experience” and its variance is 14.25 percent. Finally, the last factor is related to “pricing” (variance = 10.26 percent).

Results of the 2-way ANOVA

The total scores of five components derived from factor analysis were tabulated against gender and educational levels. The total scores with respect to the male and female respondents are very close except for the “personality” factor where the deviation is obvious. However, for the education category, the deviations among different educational levels are more prevalent.

In this study, we would like to examine the respective role of gender and education on each factor attribute. The 2-way ANOVA technique is used for this purpose. Overall, there exist no interaction effect between

gender and educational level for all the five factors. The p-values vary from 0.16 to 0.94 (see Table 1). Therefore, this will warrant further analysis into each component. For the convenience factor, one can easily detect that there are no main effects in both gender and educational level ($p\text{-value} > 0.05$). In other words, there exists no difference between the male and female respondents with respect to their perception on the convenience factor. Both groups agree that it is very convenient to shop using the Internet and this can be carried out any time they want. The same argument applies to the different educational achievements. Regardless of their educational levels, respondents feel that it is very convenient to do their shopping via the Internet.

For security concerns, there exists no main effect for gender ($p\text{-value} > 0.05$) but there exists a main effect for educational level ($p\text{-value} < 0.01$). The mean score for the higher educational group is 16.75 as opposed to 12.17 for the lower educational group. In other words, the higher educational group seems to have more confidence in giving out their particulars over the Internet, as compared to the lower educational groups.

For the personality issue, main effect exists in both cases (both $p\text{-value} < 0.01$). The male respondents (mean = 20.54) are more at ease with online shopping than their female counterparts (mean = 15.54). They believe that they are less likely to be hassled by the sale promoters to make purchases. They also do not mind looking up the information themselves. As for the different educational levels, it is again detected that the higher educational group (mean = 21.52) is more at ease than the lowest educational group (mean = 15.86).

For the user experience factor, no main effects are found for both gender ($p\text{-value} > 0.05$) and educational level ($p\text{-value} > 0.05$). It simply implies that both male and female respondents feel that it is easy to conduct online shopping and they generally encounter minimal problem. Similarly, different educational groups feel that they experience few problems in using the Internet technology.

Lastly, for the prices issue, the main effect exists marginally for gender ($p\text{-value} = 0.08$). However, if the significant level is assumed to be 0.05, then there exists no main effect. In other words, both male and female respondents feel that they can get a better deal by shopping online. It also allows them to compare the prices before they make the deal. On the other hand, perceptual differences exist for different educational groups. Those with university degree or above tend to agree more on the proposition that the internet shopping website offers competitive prices and also allows them to look for the best price before they purchase (mean = 22.59).

Table 1 Results based on 2-way ANOVA

| Source | Sum of squares | DF | Mean Square | F value | <i>p-value</i> |
|--------------------------|----------------|----|-------------|---------|----------------|
| <i>Convenience</i> | | | | | |
| Gender | 2.68 | 1 | 2.68 | 1.53 | 0.22 |
| Educational level | 5.28 | 2 | 2.64 | 1.51 | 0.22 |
| G x EL | 5.18 | 2 | 2.59 | 1.48 | 0.23 |
| <i>Security concerns</i> | | | | | |
| Gender | 2.96 | 1 | 2.96 | 0.86 | 0.36 |
| Educational level | 302.13 | 2 | 151.06 | 43.76 | 0.00 |
| G x EL | 13.05 | 2 | 6.52 | 1.89 | 0.16 |
| <i>Personality</i> | | | | | |
| Gender | 705.83 | 1 | 705.83 | 62.27 | 0.00 |
| Educational level | 331.32 | 2 | 165.66 | 14.62 | 0.00 |
| G x EL | 38.89 | 2 | 19.44 | 1.72 | 0.18 |
| <i>User experience</i> | | | | | |
| Gender | 2.41 | 1 | 2.41 | 0.12 | 0.73 |
| Educational level | 20.65 | 2 | 10.33 | 0.50 | 0.61 |
| G x EL | 51.27 | 2 | 25.63 | 1.25 | 0.29 |
| <i>Prices</i> | | | | | |
| Gender | 18.35 | 1 | 18.35 | 3.10 | 0.08 |
| Educational level | 260.47 | 2 | 130.23 | 21.97 | 0.00 |
| G x EL | 0.79 | 2 | 0.40 | 0.07 | 0.94 |

In sum, there exists no interaction effect between the gender and the educational level in all the issues examined. For gender, main effect exists in the “personality” issue only. For educational level, main effect exists in 3 out of 5 cases, namely, “security concerns”, “personality” and “prices”.

5. DISCUSSION AND CONCLUSION

The main objective of this study is to examine the influence of gender and educational level on attitudes toward buying or consider buying over the Internet. The high means for the convenience factor showed that there was a general consensus among the respondents that the Internet is a convenient medium for information search or making purchase, taking into the account that the Internet spans international boundaries and is available 24hrs a day. This was indicative of individuals with different educational levels and of both gender groups.

However, Singaporeans in this study registered low means for security concerns regardless of gender or educational level. This can be attributed to the fact that Internet privacy and transactional systems are still in its infancy stages locally. With the recent spate of Internet

crimes involving banks and tampering of private information, the concern of revealing personal information on the Internet is reflected here. In addition, better-educated respondents seemed to be less concerned about security issues. This could be explained by the fact that better-educated individuals spend more time on the Internet. Thus familiarity levels and trust towards Internet security are higher as a result. This opens an avenue for companies tapping the local Internet market to design alternative strategies for market segmentation based on educational levels.

The personality factor measured the extent to which individuals are comfortable with not having a ‘real’ shopping experience, where physical touch and enjoyment enhance the shopping process. Gender differences were shown to have a significant effect on this factor. Females indicated a dislike for not being able to savor a physically shopping experience online while males did not mind that much. This of course could be very product specific as women often purchase clothes; cosmetics while the males tend to purchase more on products like software and financial services. This might serve as a working platform for Internet companies wanting to target the female consumer market. The lack of physical touch could be

substituted with a more interactive website, providing more information, or even making use of new internet technology like virtual tasting and touching.

The study also found that higher educated individuals are less likely to be affected by the personality factor. This is especially so for those who are higher educated. This can probably be attributed to the fact that the higher educated individuals spend more of their time at the work place and have less time to conduct physical shopping. They might also possess better information and knowledge on products and services they intend to purchase, and thus feel safe about not having to have physical feel or personal contact in the buying process.

No significant effect was detected for user experience for both gender and educational groups. User experience measured the perception of usability and usefulness of the Internet in general and a high total mean score indicated that Singaporean users are generally satisfied with the functions provided by the Internet. The fact that this is consistent through gender and all educational levels could indicate high Internet penetration rate among Singaporeans across the board. This is reflected in our data set where 87.1% of the respondents have Internet connection and six in ten users use the Internet for product information search. With the high Internet literacy rate and satisfactory user experience, there is a vast pool of consumers for which Internet companies could work on to identify their niches.

The study also predicts that educational levels would have an effect on the perception of pricing on the Internet. The perception of the Internet providing better prices and more cost savings increased with the level of education. In this study, the characteristics of people who actually search the Internet for information might provide a clue. Most of the respondents who claim they use the Internet for information search belong to the immediate or upper educational levels. The fact that they use the Internet for information search gives more opportunities for price comparisons as compared to those who do not do so. It is also noteworthy that web based businesses are able to offer more attractive prices due to reductions in capital costs of a physical operating outlet.

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