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The Security Concern on Internet Banking Adoption Among Malaysian Banking Customers

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Abstract: The existing literatures highlights that the security is the primary factor which determines the adoption of Internet banking technology. The secondary information on Internet banking development in Malaysia shows a very slow growth rate. Hence, this study aims to study the banking customers perception towards security concern and Internet banking adoption through the information collected from 150 sample respondents. The data analysis reveals that the customers have much concern about security and privacy issue in adoption of Internet banking, whether the customers are adopted Internet banking or not. Hence, it infers that to popularize Internet banking system there is a need for improvement in security and privacy issue among the banking customers.

Key words: Internet banking, Malaysia, security in adoption of internet banking

INTRODUCTION

Banking over the Internet is attracting a great deal of attention in the banking and regulatory communities and developments in this new delivery channel are the subject of numerous articles in the banking press. As with other areas of e-commerce, discussions about Internet banking often proceed without reference to the actual state of market developments. This study deliberates on the security concern of customers on the adoption of Internet banking in Malaysia. The study is a qualitative empirical research on the development of Internet banking in Malaysia.

The introduction of Internet offers seamless opportunities, sweeping through the global system and challenging the existing business structures and systems. The rules today are being redefined, new players are emerging and new ways of doing things constantly change the way we think.

On June 1, 2000, the Malaysian Central Bank gave the green light for locally owned commercial banks to offer internet banking services. On June 15, 2000, Maybank, the largest domestic bank became the first bank to offer internet banking services in Malaysia. On August 7, 2002, 8 Malaysian Commercial Banks started offering internet banking services. They are the Alliance Bank Malaysia Berhad, Ambank Berhad, Bumiputra-Commerce Bank Berhad, Hong Leong Bank Berhad, Malayan Banking Berhad, Public Bank Berhad, RHB Bank Berhad, Southern Bank Berhad.

In 2002, 25,000 May bank's customers and 10,000 HSBC's customers were subscribed to Internet banking

(Yu, 2002; Bernama, 2002). Given the fact that these two financial institutions are the leading banks in providing internet banking.

Internet penetration has not achieved a significant growth in 2002, with 21% of Malaysians having used the Internet, compared to 24% in the year 2001 and 25% in the year 2000, (Internet World Stats, 2004). It infers that out of 25,581,000 population in Malaysia, it has been found that 8,692,100 are internet users.

The number of Internet banking users is growing not just in Malaysia, but throughout the world. The convenience of using Internet banking to perform banking facilities 24×7 gives an edge over the delivery channels offered previously such as phone banking, fax banking, kiosk and online banking through dedicated lines to the bank. Generally, Malaysians are accepting Internet banking with open hands; however, greater promotions should be undertaken to enhance the adoption of the Internet and Internet banking which go hand in hand.

Despite the advantages and hype of Internet banking, there are issues that need to be dealt with. These issues are big in nature and the awareness about it among the Malaysians and banking customers in specific are growing in nature. The main issue is on trusting the Internet banking (Ooi, 2002) due to security reasons. The next issue is that most Malaysians may just want somebody to be behind the counter to serve them. (Reuters, 2002). There are also a lot more issues of Internet banking that are worrying the Malaysian banking customers which tend to counter the advantages and benefits of Internet banking.

In order to identify this slow growth trend, few studies have been made in Malaysia and in other countries. Sathye (1999), identified the security concerns and lack of awareness about Internet banking stand out as being the obstacles to the adoption of Internet banking in Australia. Ramayah *et al.* (2002) identified the following six external variables that influences the Internet banking among the Malaysian consumers namely, prior experience, training, perceived risk, awareness, cost and external pressure was used. This study highlighted that the majority of respondents have no experience in using Internet banking. Suganthi *et al.* (2001) explores that the adoption of Internet banking in Malaysia is slow due to the factors such as the security, consumer awareness, ease of use, accessibility, simply reluctance to change, preference for personalized services and cost of adopting the innovation.

With regard to self-service technologies in banking, risk has been identified as a relevant characteristic in the phone banking (Lockett and Littler, 1997). In the context of Internet banking, Black *et al.* (2001), while not specifically using the work risk suggest that errors and the security afforded might be considered as measures of risk. Polatoglu and Ekin (2001) consider risk in terms of financial, physical and social characteristics. It has been known that security risk in one of the major barriers to the adoption of online banking. In a more general framework, Kurtas (2000) articulated a set of factors that hinder web-banking applications. These included computer piracy and general security issues, telecommunication infrastructure and possible social implications, such as downsizing and lay offs.

Chung and Paynter (2002) found that the main factors that inhibit the adoption of Internet banking in New Zealand are security, doubt about the complication of Internet banking and the ability to bank using other facilities. Other important factors that customers use to judge the performance of retail Internet banking services are response time, services free from technical problems and up-to-date information. Further, the study found that the customers are not adopting Internet banking because they were unsure about the security of the transactions.

According to Liu and Arnett (2000) the need for secure transactions are critical to the success of not only Internet Banking but that of any e-commerce related website. Ramayah *et al.* (2002) found that individuals ranked security as the major concern followed by availability of infrastructure, complexity of the technology and awareness of Internet banking and price.

MATERIALS AND METHODS

The research is based on both primary data and secondary data. The questionnaire has been finalized after a pilot study, consisted of 30 sample respondents. The secondary data also collected to support the primary data analysis. The secondary information has been collected from internet, government of Malaysia publications and publication from Bank Negera (Malaysia Central Bank) of the study. The instrument used is a self administered questionnaire and the data was collected from both Internet banking and non-internet banking users. Data was collected from 150 sample respondents residing in the Klang valley and it was analysed using statistical tools such as One Sample t-test and U-test. The one-sample t-test is used to test the mean of the population from which the data is drawn and the U test is used to test the differences in opinion of the internet banking users and non-internet banking users.

RESULTS AND DISCUSSION

It was found that out of 150 sample respondents 70 of the respondents are male and 80 of them were females. It is evident from the findings that the majority of the respondents belonged to professional, account for 30.0%. The second largest group is the students rating to 27.3% of respondents and this is then followed by the company employee rating to 24.7% of respondents and 9.3% of the sample respondents are government employee. Further it reveals that out of 150 respondents 56.7% have postgraduate qualifications. The second largest group is degree holders accounting for 23.3%. Respondents who only completed the SPM make up the smallest group consisting of 3.3%. The majority of (43.3%) the respondents belonged to the age group of 20-29 years this is followed by those in the age group of 30-39 years. Those in the 60 and above age group only accounted for 1.3% of respondents. The sequence of the sample respondents income reveals that 36.0% of respondents earn monthly incomes between RM 3000-4999. This is followed by those respondents who earn monthly income between RM1000-2999 (27.3%) and those respondents who earn below RM 1000 (21.3%) stands the next. Respondents who earn incomes above RM 5000 per month accounted for the lowest percentage (15.3%).

Security factors of internet banking and its empirical evidence: The main purpose of this study is to gauge to what extent is the decision and growth of internet banking

services by Malaysian consumers and the factor hindering the decision and growth of Internet Banking services by Malaysian consumers. One sample T-test and U test has been used to test the hypothesis of the study. The tests are as follows:

Daniel (1999) has studied the important factors affecting the acceptance and adoption of new innovation is the level of security or risk associated with it. Even in countries where internet banking has long been established, one of the most important factors slowing progress of this new innovation is the consumers concern for security of financial transactions over the internet. Obviously, Internet Banking will not be adopted unless it is considered safe and secure by the customers. These findings and observations lead to test the variable security. To test security, the t-test has been used. The population mean for security is calculated by finding the average. The average is found based on these questions:

- Conducting banking transactions through the internet is secure enough
- The security features of internet banking should be increased
- Do you feel that the bank will take appropriate actions to settle erroneous transactions?
- Do you think that banks will help you sort out your transaction errors as soon as possible?
- Do you think that banks will compensate you for any errors in your account caused by security infringement? (Ex: hacking of personal account)

The average for the above five questions is 3
i.e., the population mean is $3 = 15/3 = 5$

$$5 * 5 = 25 = 25/2 = 12.5$$

Therefore, if the
Ho $M \leq 12.5$ then,
The null hypothesis is accepted and
The alternate hypothesis is rejected.
If H1 $M \geq 12.5$ then,
The null hypothesis is rejected and
The alternate hypothesis is accepted.

From the Table 1 we can find that the estimated t value is 56.575, which is greater than the table value of t at 5% level of significant. Therefore the alternate hypothesis is accepted which means that the Malaysian consumers strongly agrees that they refuse to adopt internet banking because of lack of security and reliability of transactions over the internet. Therefore, most of the individuals are reluctant to use Internet banking as they

Table 1: One sample t-test for security

Variable	t	df	Sig. (2-tailed)
Security	56.575	149	0.000

Source: Computed from the survey data

have concerns over security and privacy issues. This supports the findings by Sathye (1999) who found that Australian consumers are not adopting internet banking because they are concerned about safety and security of transactions over the internet. This also supports the findings of Suganthi *et al.* (2001) who found that one of the important factors affecting internet banking in Malaysia is security concerns. This also supports the findings of Ramayah *et al.* (2002) which found that most of the individuals are reluctant to use Internet banking as they have concerns over security and privacy issues. This is also supported by the findings of Al-Sabbagh and Molla (2004), who found that perceived security and trust have emerged as the top issues inhibiting Internet banking adoption. According to the recent report released by Ripstech's (The Star, 2002) on Internet Security Threat, Malaysia was among the top 10 attack sources in terms of the number of the attacks per 10,000 internet users in the country. The study also reported that companies involve the financial services were among the favourite targets of attacks originating from Asian countries. Therefore, banks should ensure that safety measures such as firewalls, intrusion detection and other related security are properly developed and enforced properly.

The U-test also has been used to test the difference in opinion of the Internet banking and Non-Internet banking users on security. The Internet bank offers banking consumers a new frontier of opportunities and challenges further augmenting competition in the global banking market. However, the success of this new distribution channel for banking products and services depends on the rate of which the new technology is adopted by the Malaysian consumers. Technology adoption depends on the understanding of its functions, strength as well as weakness of the new technology by the end users. In the early stage of the technology diffusion, the people who are able to understand well and willing to take risk will adopt it. Hence, it is expected that there should be significant difference in the perception on security and trust among the users and non-users. Hence, the present study tests the perception of the end users in these connection.

Here, by assuming that the Internet banking users and non-users have different characteristics/behavior in these aspects, U-test has been adopted. The result in the Table 2 indicates that there is a significant difference in opinion of the Internet banking users and Non-Internet banking users on the factor security i.e.,

Table 2: U-test for the variable security

Statistical test	bkg transaction is secure	Security should be increased
Mann-whitney U	1041.000	2456.000
Wilcoxon W	6091.000	3731.000
Z	-6.242	-0.207
Asymp. Sig. (2-tailed)	0.000	0.836

Source: Computed from the survey data

whether conducting banking transactions through internet is secure at the same time both the Internet banking user and Non-Internet banking users are not satisfied with the level of security features. They feel that the security features should be increased. This entails that the users still doubt about the confidentiality and safety of the technology. This may be due to lack of publicity about the safety of the transactions. This finding supports the findings of O'Connell (1996), ABF (1997), Booz *et al.* (1997), Cooper (1997), Ramsay and Smith (1999).

CONCLUSIONS

The challenge that lies ahead for banks is fourfold. First, they need to satisfy customer needs that are complex and difficult to manage. Secondly, they need to face up to increased competition from within the sector and from new entrants coming into the financial services market. Thirdly, they need to address the demands placed upon on the supply chain. Finally, they must continually invent new products and services in the light of the changes as described.

This study provides an insight on the customers needs which may be useful to bankers in providing better services to their clients. The main reasons for most of the consumers in not opting for Internet banking is the security issue in their banking activity. The security features of Internet banking should be improved by building stronger firewalls to prevent hackers in entering into Internet banking system. The main thrust is for Internet banking site to be user-friendly so that those who are not computer experts can also use it. Consequently, the banks can get more Internet banking users in the future.

For a successful implementation of Internet banking in Malaysia or in any other part of the world, adequate legal and physical infrastructure are major prerequisites. Then customers may be feel confident about the privacy and security issues associated with Internet banking. Finally, quality of services provided would certainly be a very important determinant for the success of Internet banking.

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