

**INTERNET BANKING SERVICE QUALITY AND E-LOYALTY IN
PENANG, MALAYSIA**

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**INTERNET BANKING SERVICE QUALITY AND E-LOYALTY IN
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ABSTRAK

Perbankan Internet menjadi semakin popular di Malaysia. Pada masa sekarang, terdapat 23 bank perdagangan termasuk bank tempatan dan bank asing beroperasi di Malaysia yang menawarkan perkhidmatan perbankan Internet. Persaingan urusan perbankan Internet adalah hebat dan bank Internet boleh mendapat atau hilang kesetiaan pelanggan melalui tindakan satu “klik tetikus” mereka. Oleh itu, Jadi kesetiaan pelanggan (E-Loyalty) adalah amat bernilai kepada bank kerana ia adalah satu kelebihan persaingan. Bank Internet biasanya akan berfokus untuk membina kesetiaan pelanggan dengan memberi perkhidmatan yang bermutu untuk memenuhi kehendak dan keperluan pelanggan. Hasil daripada interaksi bank Internet dengan pelanggan mereka melalui system web, keselamatan maklumat dan urusan peribadi adalah amat penting. Perkhidmatan yang bermutu tinggi, kepuasan pelanggan atau e-kepuasan dalam konteks ini adalah kunci kesetiaan pelanggan (e-kesetiaan). Model penyelidikan oleh Caruana (2000) menunjukkan perhubungan mutu perkhidmatan dengan kesetiaan pelanggan melalui kepuasan pelanggan telah di gunakan sebagai rujukan dalam kajian ini dan kesan penyederhana amanah telah diujikan.

Dimensi mutu perkhidmatan perbankan tradisi tidak patut digunakan sepenuhnya untuk perbankan Internet. Jadi, selain daripada dimensi perangsangan, jaminan dan pelayanan khas, 3 dimensi umum untuk perbankan Internet namanya perancangan jaring, imej dan reputasi perbankan Internet dan kemajuan berterusan telah digunakan untuk kajian ini. Mengikut kajian ini, kami mendapati dimensi keselamatan and kesulitan, kesenangan mengguna dan imej dan reputasi perbankan Internet adalah penting untuk mewujudkan E-Loyalty. Di dalam kajian ini, kami juga mendapati bahawa E-kesetiaan hanya merangsangi perhubungan dimensi keselamatan dan kesulitan dan kesenangan mengguna dengan E-Loyalty.

ABSTRACT

Internet banking is gaining popularity in Malaysia. Currently there are 23 commercial banks (local and foreign banks) operating in Malaysia that provide Internet banking services. The Internet banking business competition is fierce and Internet banks could gain or lose customers' loyalty by just a mouse click by customers. Customers' loyalty or recognised as E-loyalty in this study, is very valuable to banks as it is a competitive advantage. Internet banks generally will focus to build customer loyalty by providing good service to satisfy customers' need and want. Due to the unique business interactions of banks with customers are via web site interaction, web site security and privacy are viewed as important service dimension by Internet banking customers. Superior service quality, customer satisfaction or E-Satisfaction in this context, will lead to E-Loyalty. The present study adapts the mediational model of Caruana (2000) that links service quality to E-Loyalty via E-Satisfaction and the moderating role of E-Trust are proposed.

The service quality dimensions of traditional banking environment cannot be adapted fully for Internet banking service quality. Thus, 3 commonly used e-quality dimensions of E-Scape, image and reputation of Internet bank and continuous improvement were chosen in addition to responsiveness, empathy (recognised and termed as customization in this study) and assurance (recognized and termed as security and privacy in this study) measured in the study of Caruana (2000). In this study, privacy and security, ease of use and image and reputation of Internet bank were found significant to E-Loyalty. However, partial mediating effect of E-Satisfaction was found on the relationship service quality dimension of privacy and security and ease of use only. Direct relationship of E-Trust and E-Loyalty was found in this study. Lastly, the implications and suggestion for future research are provided.

CHAPTER 1

INTRODUCTION

1.1 Introduction

Internet banking is the new age banking. Technology innovation and fierce competition amongst the banks have enabled a wide range of banking products and services, being made available to customers through an electronic distribution channel referred as e-banking or Internet banking.

Internet banking is expanding in many Asian countries, including South Korea, Hong Kong, Singapore, China, and Taiwan, Thai and Malaysia (ACNielsen, 2002). Internet Banking has changed the way retail banks build and maintain their business relationship with the customers. In absence of direct human interaction in Internet banking environment, each service element provided is the opportunity for the bank to reinforce or establish quality perceptions for customers (Broderick and Vachirapornpuk, 2002). Henceforth, understanding of service quality issues and customer loyalty in online business environment becomes important in order to stay competitive in the industry.

1.2 Background of Study

Internet banking is gaining its popularity and becoming more important. Bank Negara Malaysia (BNM) has first allowed local banks to conduct banking activities via Internet in June 2000. The locally incorporated foreign banks were allowed to set up communication websites with effect 1 January 2001 and transactional websites from 1 January 2002 (BNM 2000). Today, the e-services offered by 23 commercial banks in Malaysia (9 local banks and 14 locally incorporated foreign banks in Malaysia as per Table 1) include ATM, Telebanking, Mobile Banking, PC Banking, Automated Banking Centers (Kiosks) and Internet Banking which enable customers to perform online financial transactions such as electronic payments of bill or loan, fund transfer, apply credit card or loans, check loan or deposit balances and perform electronic IPO share application without going to the banks and at anytime and anywhere. (Ramayah et al., 2008)

Commercial banks in Malaysia

Source : Website of respective Internet Banks In Malaysia and E-Banking in Malaysia: Opportunity and Challenges, *Journal of Internet Banking and Commerce*, December 2005, vol. no.3 and Suganthi and Balachandran, 2001)

Commercial Banks	Ownership	Web site and Transactions
affin Bank Berhad	Local	http://www.allinbank.com.my Account summary, fund transfer, balance enquiry, statement request, bill payments, loan & credit card payments.
Alliance Bank Malaysia Berhad	Local	AllianceOnline, http://www.alliancebank.com.my Account summary, fund transfer, balance enquiry, statement request, bill payments, loan & credit card payments.
AmBank (M) Berhad	Local	AMDIRECT, http://www.ambg.com.my Account summary, fund transfer, balance enquiry, statement request, bill payments, loan & credit card payments and transaction history.
CIMB Bank Berhad	Local	http://www.cimb.com.my ; http://www.cimbclick.com.my Account summary, balance enquiry, fund transfer, loan & credit card payments, access account balances and auto alert, standing instruction, cheque services (request cheque book, stop cheque).

ON Bank Berhad Local <http://www.eonbank.com.my>
Account summary, fund transfer, balance enquiry,
statement request, bill payments, loan & credit card
payments and transaction history.

Hong Leong Bank Local
Berhad <http://http://www.hlb.com.my/inban.html>
Account summary, fund transfer, balance enquiry,
statement download, bill payments, loan & credit card
payments, cheque services (cheque book request,
cheque-status enquiry and stop cheque), ATM cash
withdrawal and transfer limit.

Malayan Banking Berhad Local Maybank2U, <http://www.maybank2u.com.my>
Account summary, fund transfer, balance enquiry,
statement request, bill payments, loan & credit card
payments, cheque services (cheque book request,
cheque-status enquiry and stop cheque). Fixed Deposit
& Investment, Standing instruction, Online stock,
cancellation of ATM facility.

Public Bank Berhad Local <http://www.publicbank.com.my>
[PBeBank.com, http://www.pbebank.com](http://www.pbebank.com)
Account summary, fund transfer, balance enquiry,
statement download, bill payments, loan & credit card
payments, cheques services (cheque book request,

cheque-status enquiry and stop cheque), online share trading, online credit card.

HB Bank Berhad Local <http://www.rhb.com.my>

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments, IPO application, prepaid services, cheque services (cheque book request, cheque-status enquiry and stop cheque), online credit card & loan application, customer email service, online travel, Dotcom. card .

Al Rajhi Bank Berhad Foreign <http://www.alrajhibank.com.my>

Balance enquiry, fund transfer, bill payment and credit card & loans payment

RBS Bank Berhad Foreign <http://www.abnamromalaysia.com>

(formerly known as ABN) <http://www.rbs.com.my>

NMRO Bank Bhd Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments.

Bangkok Bank Berhad Foreign <http://www.bangkokbank.com>

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments.

Bank of America Foreign <http://www.bankamerica.com.my>

aysia Berhad

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments.

Bank of China Foreign -

(Malaysia) Berhad

Bank of Tokyo-Foreign -

(Malaysia)

Berhad

Citibank Berhad Foreign CitiDirect, <http://www.citibank.com.my>

Account summary, fund transfer, balance enquiry, statement download via email, bill payments, loan & credit card payments, Citi alert service.

Deutsche Bank Foreign db-direct Internet, <http://db-direct.my.db.com>

(Malaysia) Berhad

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan credit card payments.

HSBC Bank Malaysia Foreign online@hsbc, <http://www.hsbc.com.my>

Berhad

Account summary, fund transfer, balance enquiry, e-Statement, bill payments, loan & credit card payments, cheque services (cheque book request, cheque-status enquiry and stop cheque) , online loan & credit card application, foreign exchange enquiry and services, deposits.

P. Morgan Chase Bank Foreign

-

Berhad

CBC Bank (Malaysia) Foreign

<http://www.ocbc.com.my>

Berhad

eCafe, <http://ecafe.ocbc.com.my>

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments, loan application, balance transfer, customer service (e.g. report lost of ATM, change of mailing address), loan & credit card application status.

Standard Chartered Bank Foreign

<http://www.standardchartered.com.my>

Malaysia Berhad

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments, cheque services (cheque book request, cheque-status enquiry and stop cheque), update personal information, customer mail box, rates information.

The Bank of Nova Scotia Foreign

<http://www.scotiabank.com.my>

Berhad

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card payments.

United Overseas Bank Foreign

UOB Internet Banking, <http://www.uob.com.my>

(Malaysia) Berhad

Account summary, fund transfer, balance enquiry, statement download, bill payments, loan & credit card

payments, cheque services (cheque book request, cheque-status enquiry and stop cheque), Investment account, Visa money transfer.

The major driving force behind the rapid spread of Internet banking is the acceptance of Internet banking as an extremely cost effective delivery channel. Use of Internet banking is expected to lead to cost reductions of banks in long run by replacing employees and physical facilities with information technology (Jun and Cai, 2001).

The increase in Internet users is another contributing factor to the growth of Internet banking. It provides the opportunities for the bank to develop its market by attracting a new customer base from the Internet users. The Malaysian Communications and Multimedia Commission (“MCMC”) Quarter 4 Year 2007 Report reveals the following:

(1) Malaysia’s Internet users per 100 inhabitants grew by 4.5% (47.47 in 2005 & 51.98 in 2006), United State of America (“US”) grew by 2.77% (66.33 in 2005 & 69.10 in 2006), United Kingdom of 2.36% (56.03 in 2006 & 53.76 in 2005). In Asian region, ASEAN countries grew within the range from 0.1% to 15.3% in 2006. Figure 1 shows the status of Internet users per 100 inhabitants based on economies year 2006 and Figure 2 shows Internet users per 100 inhabitants of ASEAN countries year 2006.

(2) the Internet dial-up penetration rate in Malaysia grew from 1.8 (1998) to 14.3 (2007). Within a year, the penetration rate surged by 144% from 2.9 (1999) to 7.1 (2000) was recorded as shown in Figure 3. At the end of year 2007, Wilayah Persekutuan Kuala

Lumpur recorded the highest Internet dial-up penetration rate (per 100 inhabitants) of 37.8 while Penang ranked second with penetration rate of 17.8 (per 100 inhabitants) (Figure 4).

- 3) the number of hotspot locations in Malaysia shows an increasing trend from 1358 (Year 2006) to 1485 (Year 2007) will help to boost internet usage and Internet banking usage. The growth rate of hotspot locations in 2007 is 18.9%. Amongst 16 states, Wilayah Persekutuan Kuala Lumpur achieved the highest number of hotspot location of 376, Selangor ranked second with 356 hotspot locations and Penang ranked the third with 120 hotspot locations at the end of quarter 4, year 2007 (Figure 5).

As we can see from MCMC Quarter 4 year 2007 Report, Penang state has the second highest Internet penetration rate after Kuala Lumpur and ranked the third with 120 hotspots in Malaysia. Penang is the second smallest state in Malaysia after Perlis. The state is geographically divided into Penang Island and Province Wellesley, nowadays called Seberang Perai (which is on the mainland of Peninsular Malaysia). With about 2000 people per square kilometer on the island and 865 people per square kilometer on the mainland, the metropolitan area of Penang consists of Penang Island, Seberang Prai, Sungai Petani, Kulim and the surrounding areas is the second largest metropolitan area in Malaysia after Klang Valley which includes the federal capital, Kuala Lumpur. Penang is the only state in Malaysia where ethnic Chinese forms a plurality. The ethnic composition in 2007 was Chinese 645,900 (43.4%); Malay 601,200 (40.2%); Indian 158,000 (9.9%) and Others 96,800 (6.5%)

The important economy sector of the state is manufacturing. The southern part of the island highly industrialized with high-tech electronics plants such as Dell, Intel, AMD, Altera, Motorola, Hitachi, Osram, Bosch and Plexus located within the Bayan Lepas Free Industrial Zone. Penang was formally accorded the Multimedia Super Corridor City status in 2005, the first outside of Cyberjaya. Other important sectors of Penang's economy include tourism, finance, shipping and other services.

Penang was the centre of banking of Malaysia when Kuala Lumpur was a small outpost. From the history, the oldest bank in Malaysia, the Standard Chartered Bank opened its doors in 1875; followed by the Hong Kong and Shanghai Banking Corporation, now known as HSBC opened its first branch in Penang in 1885 and the Dutch-based ABN AMRO Bank opened its first office in Penang in 1888. Today, Penang remains a banking hub with branches of foreign banks Citibank, United Overseas Bank, OCBC Bank, RBC Bank, Al Rajhi Bank and Bank Negara Malaysia (the Malaysian central bank) together with local banks such as Maybank, Public Bank, RHB Bank, AmBank, CIMB Bank and Hong Leong Bank scattered in Penang island and Seberang Perai.

Pengguna Internet per 100 penduduk, ekonomi-ekonomi terpilih
Internet users per 100 inhabitants, selected economies

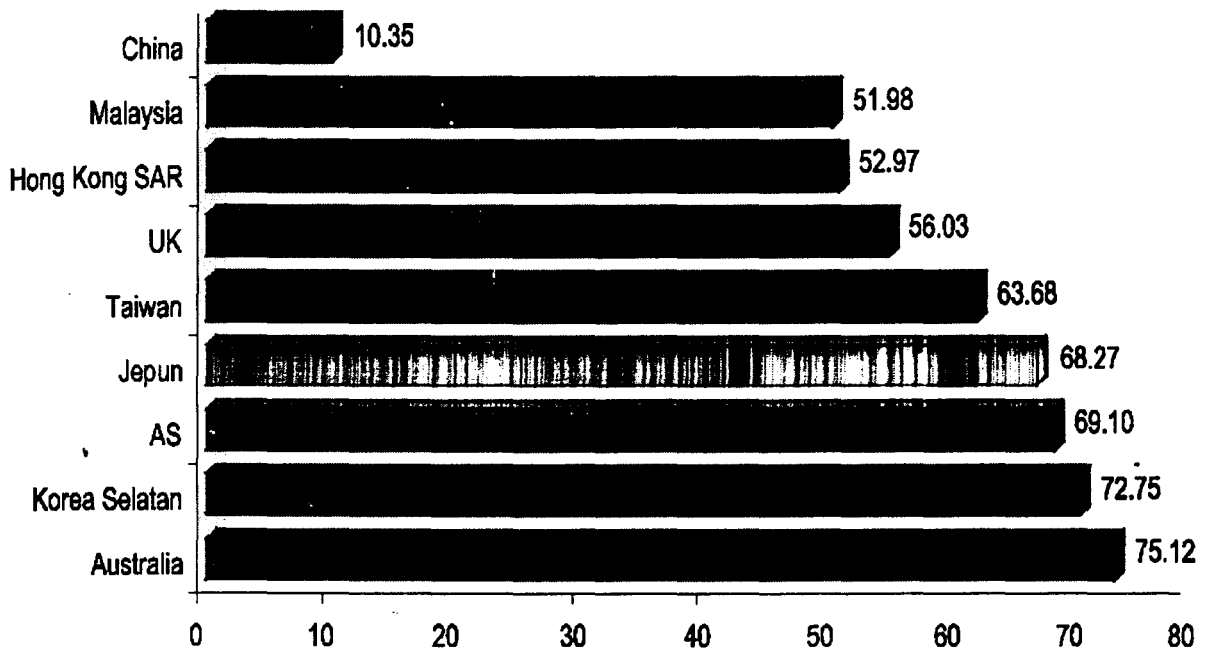


Figure 1 Internet users per 100 inhabitants, selected economies 2006

(Source: MCMC Quarter 4 Year 2007 Report)

Pengguna Internet per 100 penduduk, negara-negara ASEAN
Internet users per 100 inhabitants, ASEAN countries

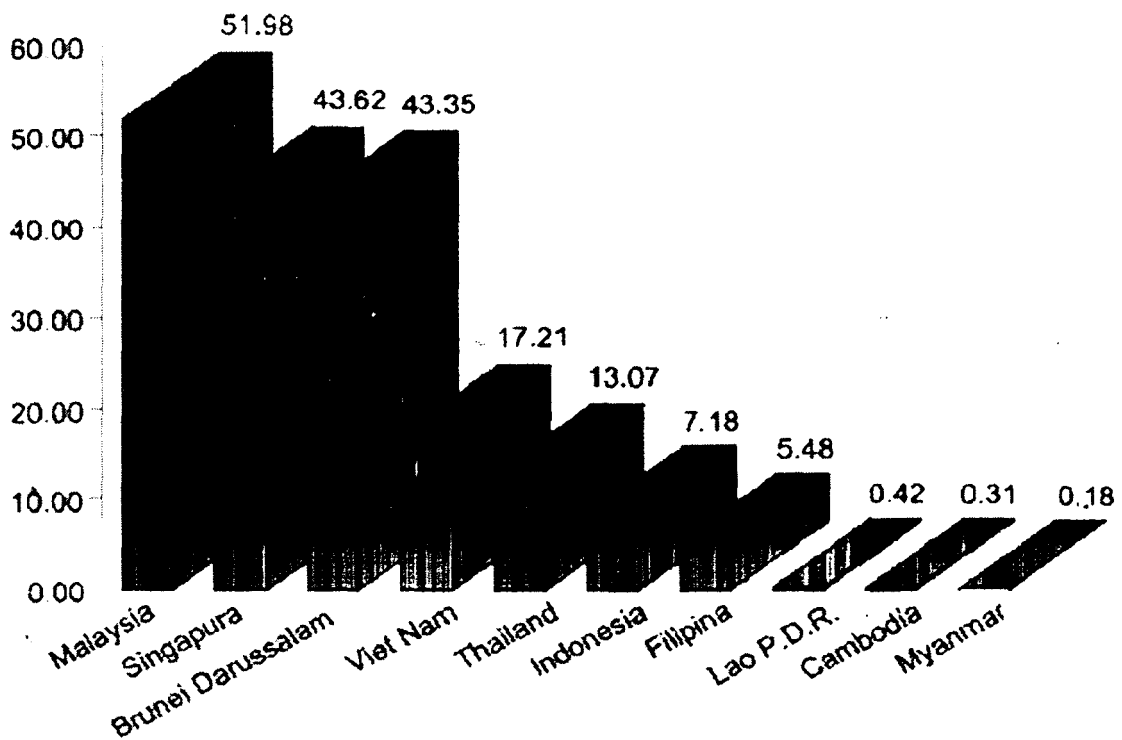


Figure 2 Internet users per 100 inhabitants, ASEAN countries 2006

(Source: MCMC Quarter 4 Year 2007 Report)

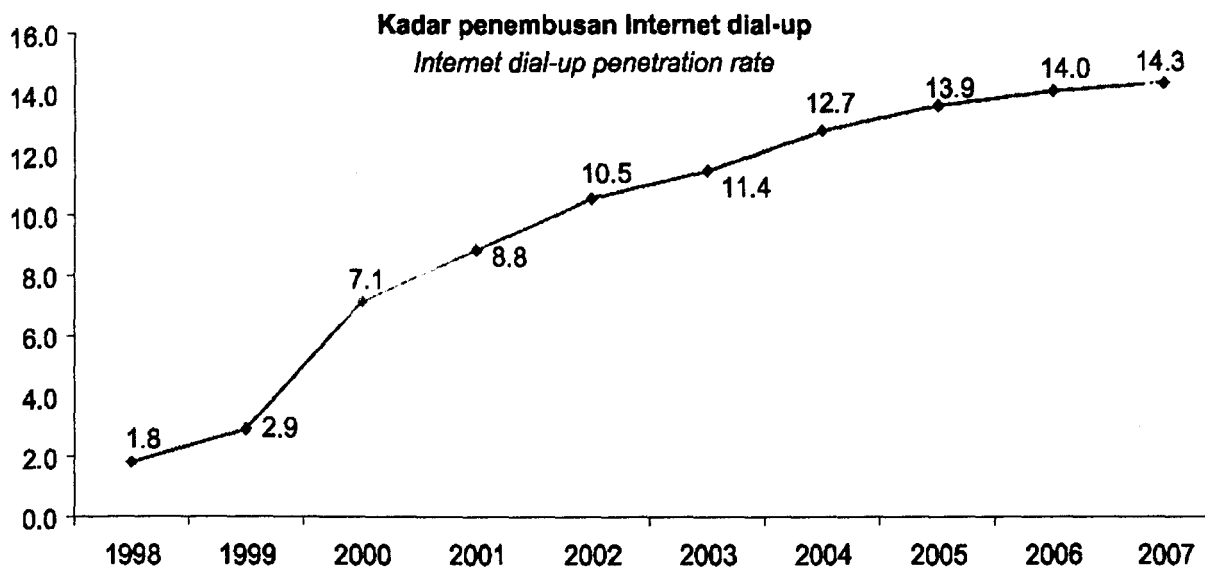


Figure 3 Growth of Internet dial-up penetration rate in Malaysia

(Source: MCMC Quarter 4 Year 2007 Report)

Kadar penembusan Internet 'dial-up' per 100 penduduk mengikut negeri
Internet dial-up penetration rate per 100 inhabitants by state

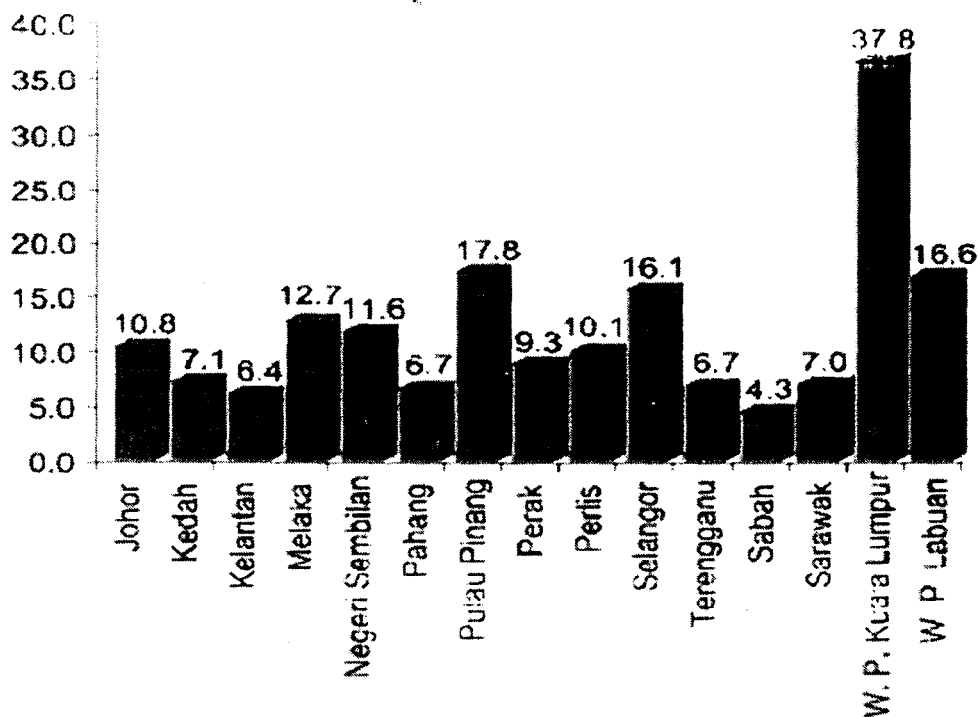


Figure 4

Internet dial-up penetration rate per 100 inhabitants by state in Malaysia, year 2007

(Source: MCMC Quarter 4 Year 2007 Report)

Bilangan lokasi 'hotspot' mengikut negeri
Number of hotspot locations by state

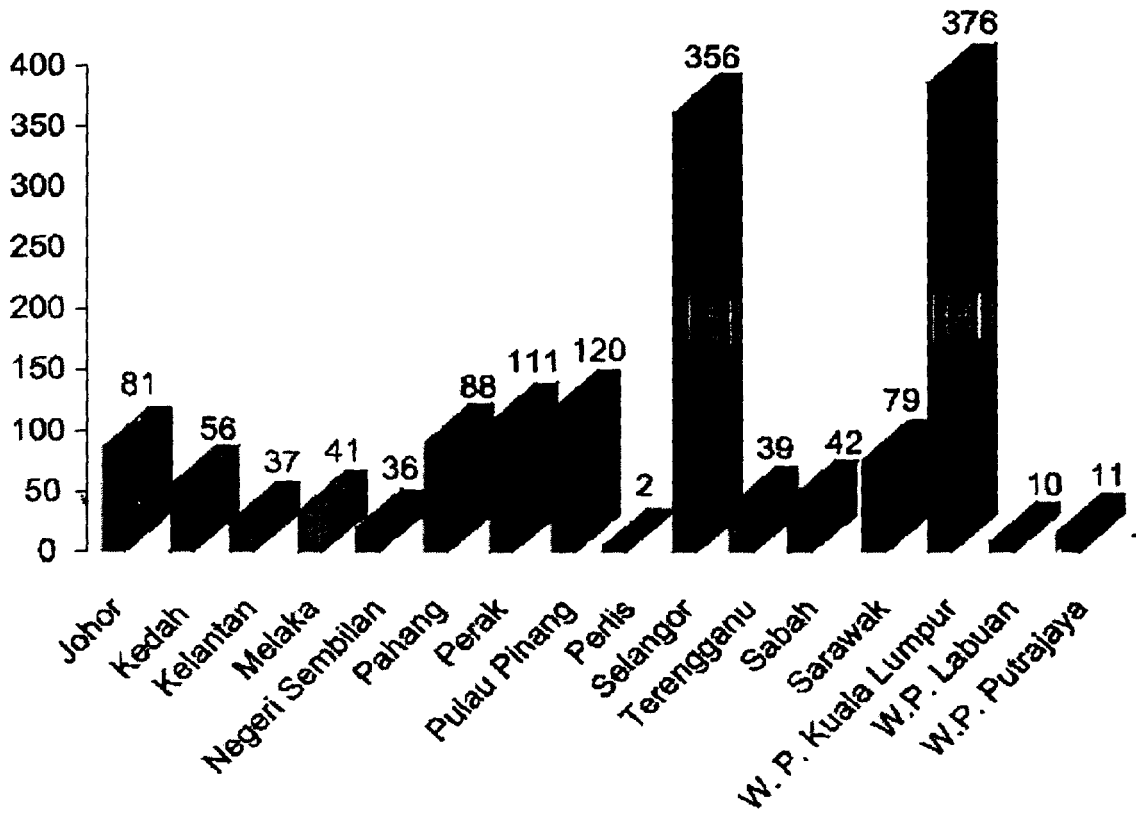


Figure 5 Number of hotspot locations by state in Malaysia, quarter 4 year 2007

(Source: MCMC Quarter 4 Year 2007 Report)

In order to stay competitive in the industry, Internet banks have to provide excellent e-service quality, a key success factor of e-commerce (Yang, 2001) to build and maintain high customer loyalty (E-Loyalty). E-Loyalty is very important in online business or e-commerce environment. However, there is high acquiring cost of new e-customer involved which could result in unprofitable customer relationship up to 3 years (Reichheld and Scheffer, 2000). Thus, it is vital for the Internet banks to know the mechanisms in creating customer loyalty on Internet banking. Based on previous researches on e-service, customer satisfaction (E-Satisfaction) and trust (E-Trust) respectively has been proposed to be attributable to customer evaluation of service quality (Wolfenbarger and Gilly, 2003; Palvu, 2003) and development of long term customer relationship.

3.3 Problem Statement

To survive in fierce global banking industry, the local Internet banks in Malaysia are competing amongst themselves and with foreign banks to enlarge their market share in Internet banking. It is 20% to 40% more costly in attracting a new online customer than servicing the traditional customers by the Internet bank. Internet banking customer loyalty is costly and market competition is strong. The competition amongst Internet banks to hold or gain new customers is just a mouse click by the customers. It is not easy to satisfy Internet banking customers' service expectation due to its unique business environment where the business interactions with customer are via web site. Superior service quality to ensure security and ease of use through the various delivery channels are amongst the factors to attract and maintain the online customers. Thus, customer loyalty becomes an essential marketing focus to retain the existing Internet banking customer while pursuing for bigger or new market.

lack of legal and web site infrastructures will be the problem for Internet banks to maintain operations. Banks has to understand the role of service quality, customer satisfaction and trust in creating customer loyalty on Internet banking.

Research Objective

The study by Ainin, Lim C.H and Wee (2005) revealed high percentage of Internet banking users in Malaysia. This indicates acceptance of the technology of Internet banking by customers today. Thus, it is timely to explore and confirm the service quality of Internet banking in Penang for enhancement of service performance purpose which in turn to increase Loyalty and profitability of bank. The service quality is measured from the perspective of responsiveness, security, E-Scape, ease of use, customization, continuous improvement, privacy and reputation of Internet bank.

In this research, the study aims to explore the key service qualities of Internet banking which may influence the customer satisfaction and lead to E-Loyalty and the role of E-Trust of its moderating effect on E-Satisfaction and E-loyalty. Thus, the study examines:

- i. the effect of Internet banking service quality on E-Loyalty
- ii. whether the relationship between the service quality attributes of responsiveness, privacy, security, E-Scape, ease of use, customization, continuous improvement, image and reputation of the Internet bank and E-Loyalty are mediated by E-Satisfaction
- iii. whether the relationship between E-Satisfaction and E-Loyalty is higher when E-Trust is high

.5 Research Questions

This study intends to answer the following questions:

- . What are the key service dimensions of Internet banking influencing E-Loyalty?
- i. What are the key service dimensions of Internet banking influencing E-Satisfaction?
- ii. Does E-Satisfaction mediate the relationship of Internet banking service quality and E-Loyalty?
- iv. Does E-Trust moderate the relationship of E-Satisfaction and E-Loyalty?

1.6 Definitions of Key Terms

Below is the definition of the following key terms or phrases used in this research:

- i. Internet banking - defined by Bank Negara Malaysia “...to bring products and services offered by banking institutions through access devices including personal computers and other intelligent devices”.
- ii. E-service – the provision of service over electronic networks such as “the Internet” and includes “the service product, service environment, and service delivery that comprise any business model, whether it belongs to a good manufacturer or a pure service provider” (Rust and Kannan, 2002). E-service is adopted as Internet banking service within the context of this paper
- iii. E-Scape – the web design of the web site in terms of colour, layout, pictures, font size, style and in facilitating web site navigation
- iv. Service quality - the degree of discrepancy between customers’ normative expectation for service and their perceptions of service performance (Parasuraman et al., 1985)
- v. E-service quality - The unique facet of online service quality which assess customer to Web site” interactions (Yang, Jun and Peterson, 2004) . e-SERVQUAL created by

Valarie and Zeithaml and Parasuraman and Malhotra measures e-service quality from the dimension of efficiency, reliability, fulfillment, privacy, responsiveness, compensation and customer contact (Gerrard and Cunningham, 2005).

- vi. E- Satisfaction – customers’ overall satisfaction of the performance of the Internet banking in terms of services
- vii. E-Trust – the degree of customers’ confidence in electronic medium (Anderson and Srinivasan, 2003)
- viii. E-Loyalty - the customers’ favourable attitudes toward an electronic business, resulting in repurchasing behaviour (Anderson and Srinivasan, 2003)

1.7 Significance of Study

The service quality dimensions of traditional banking environment cannot be adopted fully for Internet banking service quality. This study would be significant for the bank management to understand the underlying key service quality of Internet bank that could increase and built customer loyalty. Based on the findings, the bank management could assess and enhance the key service quality of their Internet Banking, to identify areas of improvement needed and further increase E-Satisfaction, E-Trust and E-Loyalty for competitive edge. As there is no consensus on the exact nature or number of e-service quality that customers consider when evaluating service quality (Wolfenbarger and Gilly, 2003; Zeithaml 2000, 2002), 8 commonly used e-service quality namely responsiveness, privacy, security, ease of use, E-Scape, continuous improvement customization and image & reputation of Internet bank were used in this research.

Due to higher cost incurred in attracting new customers in online business than in traditional, bricks and mortar stores (Reichheld and Scheffer, 2000), it is a crucial

management issue to understand how and why customer would develop their sense of loyalty
This study aims to draw out customers' desired service quality and how to satisfy and retain
the customers.

1.8 Organization of Remaining Chapters

Organization of remaining chapters of this study is as follows:

Chapter 2 introduces the literature review related to this study, the important construct
and variables. Theoretical framework and the hypotheses development formed part of this
chapter.

Chapter 3 introduces the methodology used in this study. Questionnaire development,
measures, sampling technique and data collection and analysis are explained in this chapter.

Chapter 4 covers the profile of respondent, statistical data analysis and results of the
study. The descriptive analysis is one of the analyses taken and explained in this chapter.

Chapter 5 concludes the finding of the study. The implication and limitation of the
study are discussed in this chapter to provide suggestions for future research

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The ultimate business objective of every business is to make profit. To achieve the business objective, a good understanding of service quality, customer satisfaction and loyalty and the relationship of the constructs are important for business success. In this chapter, we review the literature on the constructs of Internet banking service quality (E-service quality), E-Satisfaction and E-Loyalty and outline the expected relationships in the conceptual framework described in Figure 6.

2.2. Review of the Literature

2.2.1 E-service

E-service is defined as the role of service in cyberspace. E-service is perceived not just an order fulfilment, responsive to enquiries, email communication and status requests. It represents as the future e-commerce (Rust and Lemon, 2001). Based on a research by Taylor Nelson Sofres (2001), about 8 billion pound steering in potential Web sales were lost due to inadequate e-service. According to Rust and Lemon (2001), inadequate e-service could stall the growth of this emerging economy. Thus it is important to understand the role of e-service. Presently, we can distinguish the study of e-service based on 2 main approaches (Santos, 2003). The first focus is on the technological interfaces and the generation of new categories for general self service technology (Meuter et al., 2000; Szymanski and Hise, 2000) whereas the second approach is based on existing service quality theory for further empirical research (Parasuraman and Gewal, 2000; Zeithaml et al., 2000).

2.2 .2 E-Service Quality

Service quality is defined as the degree of discrepancy between customers' normative expectation for service and their perceptions of service performance (Parasuraman et al., 1985). The definition of service quality was further developed as "*the overall evaluation of a specific service firm that results from comparing that firm's performance with the customer's general expectations of how firms in that industry should perform*" (Parasuraman et al., 1988).

The following 10 determinants of service quality were identified by Parasuraman et al., (1985):

- (ii) Reliability, responsiveness, tangibility, competency, communication, credibility, security, access and understanding the customer ; which later be distilled into 5 dimensions of reliability, responsiveness, tangibility, assurance and empathy by Parasuraman et al. (1988)

Based on these 5 dimensions, a multi-dimension service quality assessment tool know as SERVQUAL, a 22 item survey instrument for measuring the service quality was developed (Parasuraman et al.,1985). Based on the classic determinant factors of service quality namely reliability, responsiveness, assurance and empathy, some specific factors were noted in Internet service environment namely reliability, responsiveness and assurance. Reliability refers to information available, efficiency of transaction and mistake handling and the integration with other service channels. Under responsiveness, customers concern whether the bank could respond proactively, efficient and timely in communication. Among these 3 factors, assurance factor would be the most important as remote delivery were twofold. SERVQUAL developed by Parausraman et al. (1985) has been applied by researches to a numerous service industries. However, it may not appropriate for measuring service quality

cross industries and online service quality. The unique facet of online service quality is not covered by the instrument of SERVQUAL which primarily assess “customer to employee” and not “customer to Web site” interactions (Yang, Jun and Peterson, 2004). To measure the e-service quality, the creators of SERVQUAL, Valarie and Zeithaml and Parasuraman and Malhotra created e-SERVQUAL which contains 4 core factors (efficiency, reliability, fulfilment and privacy) and 3 secondary factors of responsiveness, compensation and customer contact (Gerrard and Cunningham, 2005).

Cronin and Taylor (1992) challenged SERVQUAL and developed the SERVPERF scale which measures customers’ performance perceptions directly by using solely 22 performance items of SERVQUAL. A few other researchers have supported the view that SERVPERF is a better alternative than SERVQUAL (Babakus and Boller, 1992; Brady et al., 2002). The operations of both SERVQUAL and SERVPERF relied on the conceptual definition of service quality is the attitude of comparing expectation with performance of services offered (Parasuraman et al., 1985, 1988; Cronin and Taylor, 1992). SERVQUAL directly measures both expectations and performance perceptions while SERVPERF only measures performance perceptions. SERVPERF uses only performance data on the assumption that the respondents will automatically compare the performance perceptions with performance expectations while they provide rating.

2.3 Service Quality of Banking Industry

There were criticisms from other researchers (Johnston, 1995) that the single instrument is not appropriate to measure service quality across industries (Cronin and Taylor, 1992; Jun and Cai, 2001). The customer perceived service quality of banking industry was conducted by various researchers using critical incident technique (CIT). 18 service quality attributes were found (Johnston, 1995): access, aesthetics, attentiveness/helpful, availability, care, cleanliness, comfort, commitment, communication, courtesy, flexibility, friendliness, functionality, integrity, reliability, responsiveness and security.

As e-banking is a recent emerging field, there is not many in-depth literature addressed the on-line system quality. In absence of this, we can rely on the research on information system quality in end user environment. The end user here is referring to user/customer that interacts directly with the application software (Doll and Torkzadeh, 1988). Among the factors that influence end user satisfaction in computing environment are content, accuracy, format, ease of use, system or web design quality, information quality, and playfulness. In Jun and Cai (2001) study, very positive and negative e-banking experience was analysed to identify 17 factors namely customer service quality, online system quality and a single factor of banking service quality on e-banks.

a) Responsiveness

Prompt reply to customers' inquiry and problem issues and ability to meet customers' individual need are important to create and maintain customer satisfaction and loyalty (Dwayne and Pedro, 2006; Ribbink, Allard and Sandra, 2004; Albert, Arthur and Pierre, 2000). Responsiveness was closely related to customers' satisfaction in dealing with the bank and their decision to maintain the relation with the bank (Ugur, Zeyen and Donald, 1997).

(b) Privacy and security :

Privacy and security are important service quality to customers in performing their banking transaction and dealing with banks. In Malaysia, customer's privacy and security of customer data and information are protected by BAFIA ACT 1989 (Banking and Financial Institution Act 1989). Based on e-SERVQUAL model of Zeithaml et al (2000, 2002a) and many previous researches on the service quality of e-commerce and internet banking, security and privacy are also found to be the important factor influencing customers' acceptance and use of online transactions (Riadh, 2008; Carlos and Minguel, 2006; Gerrard and Cunningham, 2005; Parasuraman and Zeithaml, 2005; Zhilin, Minjoon and Robin 2004 ; Ramayah et al., 2003 and Robert, 1997). The integrity, confidentiality and authentication of transactions and the entire information system of the Internet bank must be placed as most crucial security concern to prevent fraudulent use of the data (Jones et al., 2000). Thus, protection of privacy is the greatest concern of Internet purchasers (Udo, 2001). Lack of privacy and security are the main obstacles in development of Internet banking by banks (Dong Her et al., 2004 and Kelly and Erickson, 2004). The Internet bank could build a good brand name and reputation if it protects individual's private information and provides high security (Tham Kian Teck, 2002). In various study (Caruana, 2000; Gefen, 2002; Ribbink et al., 2004), privacy and security were found significant to customer loyalty.

(c) Ease of Use

Ease of use is another important dimension of service quality in Internet banking that could affect customer satisfaction and loyalty. The system features and website design must be user friendly, dependable, easy to understand and available any time to attract and encourage