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Issues of E-Banking Transaction: An Empirical Investigation on Malaysian Customers Perception

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Abstract: This study investigated the determinant factors of consumers' perception on E-banking transaction in Internet banking by Malaysian bank consumers. The research framework was developed to testify the statistical relationships between consumer perceptions and E-banking transaction. Factor analysis was performed to extraction and make initial decision on the number of factors underlying asset of measured variables of interest. Thereafter, multiple regression was estimated to anticipate the effects of the explanatory variables. This study showed that only secure transaction, have significant impact on consumers perception about E-banking transaction. Rest three factors regulatory framework, service quality and sufficient mechanism negligible impact and hypothesis was rejected. This study offers an insight into E-banking in Malaysia, which has not been previously been investigated and much statistical significance makes this study a potential cornerstone for future research.

Key words: Consumer perception, e-banking transaction, electronic commerce, empirical investigation

INTRODUCTION

Electronic transaction has become a very important technological advancement for changing business practices presently (David *et al*., 2008; Brodie *et al*., 2007; Gonzalez *et al*., 2008). Developments in technology are changing dramatically, as a result all retail banks conduct their business, over the last decade, which paced of changed has accelerated due to the introduction of the internet and the subsequent evolution of internet banking (Sayar, 2007). Online service provision is increasingly becoming a favored distribution channel by customers and service providers alike. Within recent years there has been a concerted effort by banking institutions to increases the number and range of services through online. To encourage participation, banks are both rewarding customers for using online services and concurrently penalizing customers for utilizing offline services (Herington and Weaven, 2007).

Electronic banking (E-banking) has experienced explosive growth and has transformed traditional practices in banking (Gonzalez *et al*., 2008). Brodie *et al*. (2007) speculated that these would lead to a massive shift in marketing practices leading to superior business performance. In fact, it has become the main means for banks to market and sell their products and services and is perceived to be a necessity in order to stay profitable and successful (Christopher *et al*., 2006). The changes occurring in the banking sector can be attributed to increasing deregulation and globalization, the major stimulus for rationalization, consolidation and an increasing focus on costs (Hernandez and Mazzon, 2007). These issues encountered in electronic service delivery have thus prompted a proliferation of research into how service quality may be measured and managed for electronic service deliveries (Shamdasani *et al*., 2008).

As prospect of E-banking depends on customers, therefore specified that understanding customers' requirements and meeting their demand and expectations is becoming a challenge. With the growth in the Internet and the E-economy, the customer is in control and it is not difficult for them to move to a competitor's site (Minocha *et al*., 2003). A customer is willing to do business with an E-banking environment only if he gets value from his exchange with it. Customers' perspective, value might be defined in terms of satisfaction with and perceived quality of, the service received in the course of the total customer experience. Total Customer Experience (TCE) includes all stages of a customer's interaction with an E-commerce environment, such as the delivery of the service or product on schedule, the web-based retail site, the back-office systems and the post-sales support. To

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create value and to generate a positive TCE is important for banking environments in order to acquire customers (Minocha *et al*., 2003).

Internet banking adoption in Malaysia is relatively low and very little research has been done to understand the key adoption determinants. Though, electronic revolution has commenced in Malaysia but Internet banking is still in infancy stage. So, it's become very hard for the bank industry to design interventions that would enhance the diffusion of Internet banking (Ndubisi and Sinti, 2006). However, in the market place, this is the time of competition. So, it is becoming difficult to acquire customers. This is especially true in the context of Malaysia, where internet banking is till new and consumers are less familiar and often more skeptical towards online banking transaction due to lack of knowledge and security. Therefore, E-bank organizations need to be concerned about the customers' value in order to build customers' loyalty and to reduce customer defections. From researches, it was found that perceived service quality strongly influence customer. Earlier researches suggested that customer satisfaction also has a positive influence on the use of E-banking. In addition, the quality of the service is crucial in acquiring customers in E-banking organizations. According to the essence of service quality is the ability to deliver what the customer needs and expects (Minocha *et al*., 2003). Therefore in view of above discussion the purpose of this study (a) to examine the level of consumer perception about the security on E-banking; (b) evaluate the confidence/trust on E-banking transaction and (c) examine the influencing factors on consumer perception towards E-banking.

The theoretical framework is developed from the literature review. The dependent variable is consumer perception on the E-banking security. There are four independent variables such as trust on secure E-transaction, improved technology and sufficient mechanism for E-Banking transaction, high quality service finally, awareness and knowledge about regulatory framework of E-banking. These independent variables are positively related to the dependent variable. The detail diagram framework is shown in Fig. 1:

Hypotheses: From the discussion of the theoretical framework, four hypotheses are formulated to test the relationship between each of the four independent variables and dependent variable. The four hypotheses guiding this study are as follows:

- **H_1:** To expand E-banking transaction further, secure transactions with the trust of the consumers are necessary
- **H_2:** The increase of use of E-banking system depends on improved technology and sufficient mechanisms of control
- **H_3:** To survive in a highly competitive E-banking industry, it is necessary for banks to provide high quality service to customers
- **H_4:** The level of awareness about regulatory framework of E-banking represents a significant factor affecting the use of E-banking

The importance of the Internet to users' banking needs relates to the advantages that accrue to the users of the technology in question. According to Rogers (1983) perceived relative advantage of an innovation is positively related to its rates of adoption. As adoption and the usages of Internet banking services increases, a certain maturation point will be reached in the following years (Katariina, 2006). Academicians also take a different stance in the theories they adopt when exploring consumer adoption of electronic banking (Sylvie and Xiaoyan, 2005). Most of the researchers focused on consumer behavior, innovation and acceptance of new innovations (Gerrard and Cunningham, 2003; Hernandez and Mazzon, 2007), relationship marketing (Mukherjee and Nath, 2003) and also focused on the adopters versus non-adopters and systematically categorized adopters/non-adopters into active users, light and non-users (Sylvie and Xiaoyan, 2005). On the other hand, consumers' attitude and motivation study has been done by Serkan *et al*. (2004). However, the consumer research also lacks empirical evidence about consumer perception, attitude and motivation regarding Internet or E-banking.

Developments in technology have dominated the revolution in the banking sector during the last decade (Gandy, 1998). The world-wide expansion in technologies for connection has supported increased globalization of capital flows and financial organizations. Technology has

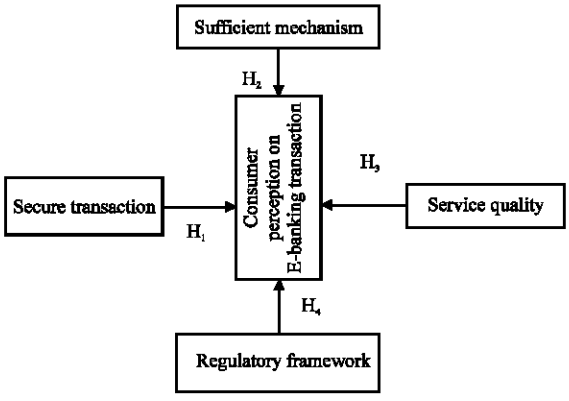

Fig. 1: Theoretical framework for this study

also facilitated the proliferation of new products and services supporting new consumer demands. At the same time, customer needs are changing. The Internet is gaining popularity as a delivery channel in the banking sector (Jayawardhena and Foley, 2000). Internet bank exists only on the Internet, the global network of computer networks without any brick and mortar branch offices. By eliminating the overhead expenses of conventional banks, Internet banks theoretically can pay consumers higher interest rates on savings than the national average. According to Insley *et al.* (2003) Electronic banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. Internet banking, sometimes called online banking, is an outgrowth of PC banking. Internet banking uses the Internet as the delivery channel by which to conduct banking activity, for example, transferring funds, paying bills, viewing checking and savings account balances, paying mortgages and purchasing financial instruments and certificates of deposit.

The financial institutions are starting to use the Internet to provide services and interact with customers. The electronic banking is no exception. Gusev *et al.* (2002) reported that to extend E-banking, three characteristics of financial services are most important. They are: (1) high availability, (2) scalability and (3) security. According to their opinion, high availability is to deliver continuous E-banking services to customers. It is the ability to provide easy and continuous services to all clients. The right network design ensures the high availability of the overall system. Availability needs to be planned through appropriate redundancies at network and server level. Yibin (2003) also indicated the improvement of the system infrastructure. According to Yibin (2003), improvements of the system infrastructure are to: (a) improve the system for credit cards and other forms of electronic transaction; (b) build-up transaction reporting services; (c) improve payment system and (d) improve telecommunications infrastructure. Once the infrastructure is placed properly, then banks can push customers to use new delivery channels by giving guarantee of security. Few studies regarding e-banking examined barriers such as, security, privacy and trust of Web system (Gerrard and Cunningham, 2003; Rotchanakitumnuai and Speece, 2004, 2003).

Electronic security is any tool, technique, or process used to protect a system's information assets, or is a risk-management, or risk-mitigation tool, which deals with security-how a web site ensures that hacker and others cannot access customer's information or their credit card numbers (Glaessner *et al*., 2002). Again Glaessner *et al.* (2002) highlighted electronic security adds value to a naked network. It is composed of soft and hard infrastructure. The soft infrastructure components consist of policies, processes, protocols and guidelines that protect the system and the data from compromise. The hard infrastructure consists of hardware and software needed to protect the system and data from threats to security from inside or outside the organization. As the Internet is a broadcasting medium, the need for security is a constant requirement of doing business over the Internet. Glaessner *et al.* (2002) stated that although technology opens up new dimensions of scope and timing but it creates the possibility for crimes to be committed very quickly. In the past, to steal 50,000 credit card numbers would have taken months, even years, for highly organized criminals. However, today one criminal using tool available on the Web can hack into a database and steal that number of identities in seconds. According to Glaessner *et al.* (2002) these are the few reasons why e-security must be taken very seriously now. However, McCahon (1999) and Haridas (2000a) pointed out that security concerns have been the most important issue facing the bankers which has delayed the expansion of this technology among banks. Pauline (2002) argued that the impact of technology trust in Web services implies the use of security services such as digital signatures, encryption mechanisms and authorization mechanisms. This study related to the condition of consumer perceptions of security in E-banking. Mainly consumers' perceptions are derived from the set of technology that is visible to them.

Chellappa (2002) argued that not all but most transactions are conducted through Web browsers that connect to merchant sites. According to them, consumer perceptions of security are developed through visible sufficient mechanisms that are carried out through the processes of encryption, protection, verification and authentication. These are software-based solutions. Chellappa (2002) defined that an electronic transaction can be considered secure, if the information involved, originates from the right entity and reaches the intended party without being observed, altered or destroyed during transit and storage. With increasing transaction activities, there have also been an increasing number of attacks on corporate networks. According to their opinion, without adequate mechanisms of control, online transactions are highly susceptible to security threats. Trust is an essential element of any transaction. Consumers trust perceptions on online transaction is based on the medium's ability to conduct secure transactions. The mechanisms of encryption, digital authentication, protection and verification of on-line

identity influence the Internet customer perception of information security and increase consumer confidence and trust.

Encryption is the use of encryption and decryption methodology in ensuring that the data transferred is only understood by the sender and receiver, stated by Jean Michel (2003). In addition specified in his book, the first type of protection on many web sites is encryption. When the Internet was first born, few security measures were taken. All information entered into a Web site would be transmitted in plain English. So, any hacker could easily tap in and read that information sent or received. Nevertheless, today most Web sites use encryption and banks guarantee security for customers using the Internet by the use of firewalls and the encryption. Through encryption, all data i.e., customer's account numbers, account balances etc. is converted into a series of unrecognizable numbers before they are exchanged over the Internet. This series of numbers create a mathematical lock and all banking requests are transformed into encrypted strings of data and are then sent over the Internet and back again to the original requests. Each time a new online banking session is initiated, a new lock and key combination is randomly created. Therefore, even if hackers could get their dirty little hands on information, they would have a tough time figuring out what it meant.

Pavlou (2003), protection is implemented for customers in many ways such as who is collecting the data, how it is stored and how inaccessible it is. Internet retailers also use firewall technologies to prevent any kind of attacks. Sathye (1999) investigated the adoption of online banking by Australian consumers and argued that the intention of Internet banking in Australia is significantly influenced by variables of system insecurity, awareness of service and its benefits, ease of use and availability of infrastructure. Other forms of security employed by banks include having an impartial third party to carry out a security assessment of the site. Martin Hepworth, who is an expert in security, found that some basic security issues were being ignored and pointed these out to the bank who were then able to take corrective measures. According to Haridas (2000b), banks need to protect their data from all kinds of security threats. Any kind of negligence has serious results and can lead to financial losses. Banks are bound to maintain confidentiality of customer's account. Otherwise their failure can cause damage to the bank and its image. Therefore, before starting to use the Internet Banking Institutions should take some actions to ensure the security. Since, for e-banking security is one of the most important factors and future challenges, because customers fear higher risk in using the web for financial transaction (Aladwani, 2001; Gerrard and Cunningham, 2003; Rotchanakitumnuai and Speece, 2003).

Gefen and Straub (2003) stated that trust is an important catalyst in many transactional relationships and it determines the nature of many businesses and the social order. The issue of trust thus arises when risk is involved. Trust is a crucial factor for the use of E-banking since the bank and customers are physically separated from each other and there is a great deal of skepticism about the security of electronic transactions over the Internet. Since, opportunities from web technology could be restricted if there is a lack of customer trust in the web system (Rotchanakitumnuai and Speece, 2003), because trust is a willingness to rely on an exchange partner in whom one has confidence (Moorman *et al*., 1993). Generally, customers do not trust Internet based technology for some reasons, such as, security of the system, distrust of service providers and worries about the reliability of Internet services (Lee and Turban, 2001; Min and Galle, 1999; Rotchanakitumnuai and Speece, 2003).

Chellappa (2002) argued that trust would be favorably influenced with the increase in perceptions of security in EC transactions. Moreover customers' lack of confidence in the security is the main obstacle to the further development of E-banking. As William Pitt, the eighteenth century British statesman once said, confidence is a plant of slow growth. The survey of Electronic Financial Transactions Systems (E-FITS) Working Group noted that the importance of consumer confidence to promote E-bank or e-finance is to establish the mechanisms for electronic financial transactions. Nexhmi *et al*. (2003) believe that trust and commitment are key relational mediators in the development of customers within the banking industry. According to them satisfaction will have a role in development but a more important element is to maintain close bank-customer relationship. Overall customer satisfaction with the bank will be directly related to the level of trust within the relationship.

Jean-Michel (2003) noted that customer is most important in designing, providing and evaluating the level of service quality. Customers' past experience with the service is one of the factors that influence them to use Electronic banking for transaction. According to Vohra (2002), Electronic banking makes it easier for customers to compare banks' services and products. This can increase competition among banks and allow banks to enter into new markets by overcoming resistance and thus expand their geographical boundary. Banks operate websites through which customers are not only able to inquire about account balances, interest and exchange rates but also to conduct a range of transactions. Minocha *et al*.

(2003) therefore specified that understanding customer' requirements and meeting their demand and expectations is becoming a challenge. With the growth in the Internet and the E-economy, the customer is in control and it is not difficult for them to move to a competitor's site. A customer is willing to do business with an E-banking environment only if he gets value from his exchange with it. Tero *et al.* (2004) has stated that Internet banking provides many benefits to both banks and their customers. However, acceptance of this new technology has not been equal in all parts of the world. Ramayah *et al.* (2003) suggested that users will eventually lose interest in using Internet banking if they feel that it is not useful to use Internet banking even though the system is rather easy to handle.

Serkan *et al.* (2004) specified four clusters of German bank consumers. These were transaction oriented, generally interested, service oriented and technology opposed groups. In another study in Singapore, Liao and Cheung (2002) found that individual expectations regarding accuracy, security, transaction speed, user-friendliness, user involvement and convenience were the most important quality attributes in the perceived usefulness of Internet-based E-banking. Among these, the first five determined the willingness of consumers to use of Internet based banking. According to Ramayah *et al.* (2003), 42% of respondents said they had access to computers and 7% said they had access to the Internet. So, the chief obstacle in Asia and the emerging markets is security. This is the main reason for not opening online banking or investment accounts and then followed by service quality. However, access to high-quality service and products is another concern. Apparently, there is also a preference for personal contact with banks.

The rising interest in marketing metrics is defined from the theoretical perspectives, one which includes brand equity. As brand equity was developed as a concept in the late 1980s in response to the perceived narrowness and short-termism of financial measures of performance (Barwise and Farley, 2004). Creating integrated marketing strategies with built in effectiveness measures is the only way that marketing will begin to chip away at the credibility crisis that plagues it today. Research points to a multiplicity of marketing metrics. Academic practitioners have identified many measures and such multiplicity available implies that managers have difficulty in defining the ideal set. However, it has been clearly pointed out that business should make better use of existing measures than acquire new ones (Ambler and Xiucun, 2003). By viewing customers as assets and systematically managing these assets, a firm can identify the most appropriate marketing actions to acquire, maintain and enhance customer assets and thereby increase the overall value of the firm and, ultimately shareholder value (Hogan *et al.*, 2002; Berger *et al.*, 2002).

On the other hand customer equity represents an integrated approach to marketing that can form the basis for more effective marketing strategies (Hogan *et al.*, 2002). Customer equity provides an information based, customer driven and competitor cognizant and financially accountable strategic approach to maximizing the firm long term profitability. Inspite of that customer lifetime value is rapidly gaining acceptance as a metric to acquire, grow and retain the right customers in Customer Relationship Management (CRM). However, many companies do not use CLV measurements judiciously and thus presents a challenge in achieving convergence between marketing actions and customer relationship management (Venkatesan and Kumar, 2004). Hogan *et al.* (2002) argued that the basic Customer Lifetime Value (CLV) model represents a useful foundation from which to begin to fill the gap between marketing actions and shareholder value. The expansion of the service sector like bank industry is overtime combined with the resultant shift from transaction-to-relationship oriented marketing has made the consideration of CLV increasingly important. These events legitimate customer equity as a key metric to those financial institutions. CLV and customer equity are already in widespread use as marketing assets metrics in some industries, most notably in direct marketing and financial services. Customer equity measurement and monitoring is rapidly expanding in other industries as well (Rust *et al.*, 2004).

MATERIALS AND METHODS

Data collection: A structure questionnaire was used to collect necessary data, which served as primary data to answer the research questions and objective regarding customer perception on E-banking transaction in Malaysia. The survey question consists nine specific sections and each of contain question pertaining different part of the study. In view of the time and cost constraints and difficulty to access respondents in Malaysia caused to conduct convenience sampling method was used for data collection procedures. Therefore, some specific places were chosen for distributing the questionnaires. It was mainly in Kuala Lumpur Klang Valley, Cyberjaya and Putra Jaya area which is indicating highest concentration of internet users. The survey was conducted mainly via., face-to-face interview and also administrated through e-mail and postage service. A list of e-mail users was obtained from Telekom Malaysia who currently registered with TMNet and survey questionnaire was only e-mailed to those internet users agreed to participate in the survey.

This step was taken mainly to avoid complains from the internet user and also to increase number of respondents. Apart from ability to reach large target respondents and inexpensive way to conduct the survey, the survey through e-mail also enabled respondents to perform easily provide extensive responses to open ended questions was provided valuable input to the study for better understanding E-banking in Malaysia. Total 250 questionnaires were distributed and each of the responses received was screened properly for error, incomplete and missing responses. However, those responses that had more than 20% of the questions in the survey questionnaire that have been left unanswered or incorrectly answered were deducted from data analysis. After the screening process was carried out 20 considered as unusable and rest 230 responses which were considered complete and valid for final analysis and hypothesis testing.

RESULTS

Factor analysis: Factor analysis has been employed to explore the underlying factors associated with 25 items by using Principal Component Analysis (PCA). Bartlett's Test of sphericity was applied to the constructs validity. Then again the Kaiser-Mayer-Olkin measure of sampling adequacy employed to analyze the strength of association among variables. The Kaiser-Mayer-Olkin measures of sampling adequacy (KMO) was first computed to determine the suitability of using factor analysis to predict whether data are suitable to perform factor analysis of not. Generally, KMO is used to assess which variables need to drop from the model due to multicollinearity. The value of KMO varies from 0 to 1 and KMO overall should be 60 or higher to perform factor analysis. If not then it is necessary to drop the variables with lowest anti image value until KMO overall rise above 60. Result for the Bartlett's Test of sphericity and the KMO reveal that both were highly significant and concluded that this variable was suitable for the factor analysis (Table 1).

Factor analysis was carried out on the consumers customer perception towards E-banking transaction and their influencing factors that are highly correlated. The process of factor analysis involves two stages: factor extraction to make an initial decision on the number of factors underlying asset of measured variables of interest and factor rotation for easy interpretability of factor extraction result and for making final decision about the underlying factors. Meanwhile the total variance explained by factors is indicated in Table 2, which suggests that the four factors account for 69% of the total variance. Factor 1, which accounted for about 2% of the variation, can be considered as secure transaction as it is

Table 1: KMO and Bartlett's test

Test	Values
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.887
Bartlett's Test of Sphericity	
Approx. chi-square	10462.89
df	338
Sig.	0.000

Table 2: Factor loading matrices following oblique rotation of four-factor solutions

Descriptions	Security of transaction	E-banking operations mechanism	Service quality	Regulatory framework
Secure transaction				
Lack of trust on system's integrity	0.979			
Lack of trust on security	0.984			
Confidence on PC technology limit internet use	0.967			
Consumers are scared to use Internet	0.977			
Sufficient mechanism				
E-banking transaction is secure enough		0.985		
E-bank security features should increase		0.970		
Bank takes actions for erroneous transaction		0.986		
Bank correct transaction errors as soon as possible		0.973		
Bank will compensate customers for errors		0.968		
Links in E-bank web page are relevant, usable		0.968		
E-bank provides policy to protect trans. details		0.976		
E-bank can protect information		0.979		
ID and password should be case sensitive		0.960		
Bank remind customer to change password		0.952		
Service quality				
Satisfied with E-bank working hours			0.970	
Satisfied with E-bank service			0.969	
Satisfied with security level			0.940	
Feeling towards own bank			0.972	
Service quality is best			0.984	
Say others positive about own bank			0.977	
Recommend others to deal with own bank			0.986	
Regulatory framework				
Legislation provides basic protection				0.980
Trust vary with development of rules and regulation				0.983
Awareness about regulatory framework affect trust				0.979
Regulation is not developing with E-bank world				0.990

strongly associated with certain aspects of attention of security on E-banking. These include; lack of trust on security (with highest factor loading of 0.984); lack of trust on system's integrity (0.979); consumers are scared to use Internet (0.977); confidence on PC technology limit Internet use (0.967) and don't mind paying extra for branded produce (0.648).

Factor matrix shows the factor loadings of different variables. The loadings of all items are observed as satisfactory for further analysis. Reliability alpha also observed as satisfactory. Thus the four factors, security of transaction, sufficiency of E-banking operations mechanism, service quality and regulatory framework are yielded and used as independent variable in the analysis.

All variables had positive loadings in factor 2. The sign of the loading indicates the direction of the relationship between the factor and the variable. Factor 2 which accounts for about 3.57% of the variation was named as sufficient mechanism factor. This factor consists of sub-variables namely: E-banking transaction (with factor loading of 0.968); reduce the E-bank security features (0.970), bank takes actions for erroneous transaction (0.976), bank correct transaction errors as soon as Possible (0.973), compensate of customers (968), Links in E-bank Web page are relevant, usable, (0.968), E-bank provides policy to protect trans (0.976), E-bank can protect information (0.979), ID and password should be case sensitive (0.960), Bank remind customer to change password (0.952).

The third factor is service quality with a total variance of 4.69%, which consists of sub-variables namely: Satisfied with E-bank working hrous (with factor loading of (0.970); satisfied with E-bank service (0.969); satisfied with security level (0.940) and feeling towards own bank (0.972), Service quality is best (0.984), say others positive about own bank (0.977), recommend others to deal with own bank (0.986). The fourth factor is regulatory framework with a total variance of 1.1%, which consists of sub-variables: legislation provides basic protection (with the factor loading of 0.980); trust vary with development of rules and regulation (0.983) and awareness about regulatory framework affect trust (0.979), regulation is not developing with E-bank world (0.990).

Hypotheses testing: Regression analysis was employed for testing the hypothesis of this research after extraction of four independent variables from factor analysis. Results for consumer perception showed in Table 3, 4 and 5. Results of this study indicated that 33.8% of variance of consumer perception about piracy was explained by these four independent variables with a significant F value of 5.873 being significant at $p<0.000$ (Table 3, 4). Therefore, there is an evident that these four factors significantly affect the consumer attention about E-banking security. Regression results also show that only Hypothesis 2 is accepted at 0.05 level of significance while rests three are rejected. The result of hypotheses testing may be shown as:

Table 3: Overall model summary of regression analysis

Model	R	R-square	Adjusted R-square	Std. error of the estimate	Durbin-Watson
1	0.581[a]	0.338	0.280	0.84823824	1.505

[a]Predictors: (Constant), REGR factor score 1 for analysis 6, REGR factor score 1 for analysis 3, REGR factor score 1 for analysis 2, REGR factor score 1 for analysis 5, [b]Dependent variable: REGR factor score 1 for analysis 1

Table 4: Analysis of variance (ANOVA) of critical factors of online transaction

Model	Variables	Sum of squares	df	Mean square	F	Sig.
1	Regression	16.903	4	4.226	5.873	0.001[a]
	Residual	33.097	46	0.720		
	Total	50.000	50			

[a]Predictors: (Constant), REGR factor score 1 for analysis 6, REGR factor score 1 for analysis 3, REGR factor score 1 for analysis 2, REGR factor score 1 for analysis 5, [b]Dependent variable: REGR factor score 1 for analysis 1

Table 5: Coefficients values of regression analysis of four major factors of online transaction

				Co-linearity statistics	
Descriptions	Standardized coefficients (Beta)	t-test	Sig.	Tolerance	VIF
Constant		0.000	1.000		
Sufficiency of E-banking operations mechanism	-0.946	-1.220	0.229	0.024	41.826
Security of transaction	-1.112	-2.182	0.004	0.055	18.056
Service quality	0.479	0.601	0.551	0.023	44.228
Regulatory framework	1.059	1.358	0.181	0.024	42.281

Note: Dependent variable: Customers' perceptions E-banking transaction

DISCUSSION AND IMPLICATION

In above we have observed that 25 items was analyzed and are using in principal component analysis followed by varimax rotation. The factor analysis revealed four dimensions underlying consumer perception on E-banking transaction, such as: (F1), secure transaction (F2), sufficient mechanism (F3), service quality (F4), regulatory framework.

Furthermore it is to explain that sufficiency of E-banking operations mechanism directly effects customers perceptions of using E-banking regression result further reports that only the effects of security of transactions on consumers perceptions of E-banking operations appears as statistically significant. The study again shows that the construct has direct negative effect. It indicates that the customers in Malaysia do not perceive the transaction as secured thus it considers as a vital inhibitors of E-banking operations by the customer. Therefore H1 is rejected at 0.5 level of significance $p>0.000$. Regarding the H2: security of transactions has the direct effect on customers' usage of E-banking and regression results show factor sufficiency of operations mechanism, although not significant, has negative impact on the perceptions where $p<0.004$. It indicates that the customers are considering the mechanism of E-banking are not sufficient but the study express that they are not considering the factor as inhibitor of usage of E-banking. Therefore, H2 is accepted (0.05 level of significance).

The result showed that service quality emerges as the important factor which affects customers' E-banking operations. The study shows the service quality, although not significant, has positive impact on the customers' perceptions but they are not considering the factor as the stimulator of usage of E-banking. Therefore, H3 is rejected as $p>0.000$. Result indicated for H4: regulatory framework affects customers' intention on E-banking operations and this study shows the regulatory has positive impact on the customers' perceptions but they are not considering the factor as stimulator of usage of E-banking since the hypothesis is not statistically significant, thus H4 is also rejected where $p>0.000$.

In spite of that this study intends to propose recommendations as provided by the respondents to make E-banking more practical and acceptable. This study also makes significant contribution to knowledge in relation to consumer's perception of the problems and prospects of E-banking. Furthermore, it also provides an insight into the customers' needs and wants which may be essential for bankers in order to provide better services to customers. Banks need more publicity about the security level and rules and regulation related to security. They can do so by education and publicity through the mass media. Respondents believe that the financial institution can give great assurance by publishing E-banking knowledge and security breach to the public. The financial institutions should have certain types of mechanism to allow the banking transaction such as by double-checking and verification etc. Double-checking and verification can be done by calling the bank customer or other methods.

Banks should make their customer more aware of their service quality and the regulations governing E-banking. This can be achieved by having seminars and exhibitions to allow customers to evaluate their new innovation. Next, the customers' level of trust in E-banking was found to have a significant effect on the customer's decision to adopt this innovation and for the continued use of this innovation. So, banks should try to earn customers' trust. When fraud cases occur through the use of E-banking, financial institutions should protect the bank customers. This protection can be in the form of compensation and investigation. The bank's support would be able to earn customers' trust on E-banking. In order to receive grater response towards E-banking, it is recommended that bankers should target their promotional activities towards customers. If possible, banks should not charge consumers for their online services.

CONCLUSIONS

Based on the findings on the security of E-banking in Malaysia, the respondents managed to reveal tremendous information to understand and evaluate the opinions and suggestions. The findings from research covered the respondent's intention on E-banking. These findings can be an asset to improve the banking facilities. From the analysis have been found that achieving consumers' trust about the transaction is the key ingredient to expand E-banking. The result shows that the consumers' attention towards the trust and confidence on the E-banking security system is the significant element.

Within ten items, case sensitivity of ID and password is found to be significant in the dimensions of improved technology and sufficient mechanism. However, the other items are found not significant in correlation with consumer satisfaction. The possible reasons for this finding would be less publicity and lack of knowledge about the mechanism of security. The absence of such things might contribute to the result that the items are not significant to influence customers about E-banking and to earn their satisfaction. When observation comes from the side of service quality, the results of this study conclude that E-bank provides logically organized and clear

information and bank correct transaction error are the two variables that explain the variance in service quality, while all the other service quality variables were not significant in customer satisfaction. The possible reasons for this finding would be that, the services offered by banks are generally not so well differentiated among the bankers that customer do not consider them to be important in determining satisfaction. In addition, there is a possibility that the service offered by banks cannot fulfill the security demand of customers and cannot earn their confidence. The result of the fourth hypothesis test shows that, the awareness of regulatory framework is the key element of customer satisfaction about E-banking security. This variable is a significant determinant of consumer satisfaction and has positive impact on the customers' perceptions but they are not considering the factor as stimulator of usage of E-banking since the hypothesis is not highly significant.

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