

DOES E-BANKING SERVICES QUALITY AFFECT E-CUSTOMER LOYALTY OF ISLAMIC BANKS?

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Abstract: E-banking has evolved into one of the essential banking services that, when properly implemented, can increase customer loyalty while also providing banks with a competitive advantage and sustaining in the market. With rising competition for better services and new Shariah compliance requirements, the Islamic banking sector is expected to provide a higher standard of quality service in online banking. However, Islamic banks disregard their physical existence, location, and technological infrastructure when providing customer services. The present study aims to determine the relationship between e-banking service quality and e-customer loyalty based on CRM theory. A convenience sample of 145 university students who use Islamic banks' online services was selected. An online survey was administered to a select group of respondents at several prominent Islamic banks in Selangor. The conceptual model was validated using SPSS, with descriptive, Pearson correlation and multivariate linear regressions evaluated. The e-service quality dimensions investigated are security and privacy, efficiency, responsiveness and communication, site organisation, and an analysis of the significant effects of these dimensions on e-customer loyalty. The findings reveal that each dimension of e-banking service quality has a positive and significant impact on e-consumer loyalty. Additionally, service quality is critical in every society since it has formed the foundation for customers to understand, interact and interpret the function of Islamic banks' online services.

Keywords: Internet banking, Security and privacy, Efficiency, Responsiveness, and communication, Site organisation

1. Introduction

The advancement of technology has created an entirely new way for businesses to communicate with their customers. With this innovation, the service industry specifically the banking industry has undergone a massive revolution in reaching out to its customers. The banking industry has fully capitalised on this expansion, establishing a variety of distribution channels to attract tech-savvy customers, increase business prospects, and maintain consumer loyalty. E-banking allows customers to enjoy a variety of customised banking services while also assisting banks in offering their services to a large number of customers in a cost-effective manner (Amin, 2016).

Malaysia has one of the fastest-growing Asian economies and an Islamic financial system that is well-designed and developed (Gani & Bahari, 2021). According to recent Bank Negara Malaysia (BNM) data, the internet banking population penetration rate has risen to 117.5% in July 2021, rising from 107.4% in July 2020 and 92.8% in July 2019. Meanwhile, the

population penetration rate for mobile banking increased to 68.2% in July 2021, up from 57.0% in July 2020 and 48.9% in July 2019 (The Star, 2021). The issues faced by Malaysian financial institutions, notably those in the banking industry, have resulted in increased pressures on these institutions in adopting various methods to attract and retain a large number of customers (Hadid et al., 2020). Although all banks are moving toward digitalisation, Amira Najihah et al. (2019) discovered that Islamic banks ignore the visible (physical or external condition), location, and electronic equipment of the banks (Farhan et al., 2020; Shankar & Jebarajakirthy, 2019). With increased competition for better services and recent specific Shari'ah compliance requirements, the Islamic banking sector is expected to not only provide a higher standard of quality service but also to be Shari'ah compliant (Elmontaser & Alhabshi, 2016).

Given that Islamic banking engages a new initiative with online banking, questions concerning the level of service quality that will be provided by the banking sector and how to establish customer loyalty with the requisite quality service supply that clients need or perceive from the industry remain unanswered. Additionally, Islamic banking is only in its early stages when compared to conventional banking in terms of the quality of the products, and services delivered. Based on this, the research on internet banking in Selangor remains limited in terms of service quality and customer loyalty. This is partly due to Selangor's relatively slow progress in expanding its IT infrastructure, particularly in rural areas (Selvanathan et al., 2016). The present study concentrates on aspects of e-banking service quality and their implications on customer loyalty among students in higher education institutions in Selangor.

2. Literature Review

A high e-service quality performance is considered a comprehensive information facility that can assist banks in differentiating their services and achieving a competitive edge through the implementation of a particular mechanism (Raza, Umer, Qureshi, & Dahri, 2020). E-customer loyalty is an important and helpful indication of internet banking success, and it has a direct impact on the bank's profitability (Kumar et al., 2021). The quality of service plays an important role in retaining customer loyalty and establishing long-term relationships between customers and Islamic banks.

2.1 E-Banking Service Quality (EBSQ)

Nowadays, all banks provide e-banking services, hence a foundational strategy to gain a competitive edge is to offer superior quality in this platform for service delivery (Shankar & Jebarajakirthy, 2019). Internet banking is a payment method that allows a banking or financial institution to conduct monetary, and non-monetary transactions through the internet. E-banking services use numerous electronic networks, such as the internet, mobile phones, television, and telephone, to carry out bank transactions. Mobile banking, smart cards, internet banking, electronic fund transfer systems, and other services are all part of e-banking. E-banking has various advantages, including lower transaction costs, improved client relationship management, and reduced geographical restrictions. Customers can use e-banking from home, which saves them time and money because they do not have to visit the

bank's branch (Mondal & Kujur, 2021). Customers' demand and expectations for financial services are increasing, and they want to utilise them anywhere, at any time, without regard for cost-effective time or place limits (Hammoud, Bizri, & El Baba, 2018).

Zeithaml, Parasuraman, and Malhotra (2002) define e-service quality as a field where there is a possibility to provide efficient, and effective services to users through electronic media. E-service quality is crucial in all societies because it has become the foundation for how customers interpret online transactions and ultimately, how it interacts and operates with the bank's online services. E-service quality demonstrates how effectively, and efficiently a specific Internet banking service can serve and facilitate online transactions (Sasono et al., 2021). In the context of the internet, e-service quality is defined as a consumer's overall assessment of the quality of services provided via the Internet (Sathiyavany & Shivany, 2018).

Many researchers have proposed various attributes, and dimensions for measuring e-service quality, which was drafted by Parasuraman, Zeithaml, and Malhotra (2005) and the latest hierarchical model of e-service quality proposed by Blut, Chowdhry, Mittal, and Brock (2015). For example, Zeithaml, Parasuraman, and Malhotra (2002) framework modified the e-service quality model with seven dimensions: efficiency, reliability, fulfilment, privacy, responsiveness, compensation, and contact. The essential e-service quality for measuring consumer impressions of e-retailer service quality was developed by the factors of efficiency, reliability, fulfilment, and privacy. When online clients have concerns or difficulties, the remaining three characteristics of responsiveness, compensation, and contact become important. This study uses an e-banking service quality scale with four dimensions comprising specifically security and privacy, efficiency, responsiveness and communication, and site organisation.

2.2 e-Customer Loyalty

For many years, researchers in the services industry have emphasised the significance of customer loyalty in lowering marketing costs, brand promotion, and market share growth (Lotko, 2022). Anderson and Srinivasan (2003) define e-loyalty as the customer's favourable attitude, and engagement with the electronic enterprise, which results in the repeatability of shopping behaviours. Because online services do not directly involve other people, online users' behaviour should be viewed differently. E-customer loyalty is primarily associated with online customers as a result of reacting to their questions, and concerns about Islamic e-banking. The significance of Islamic e-banking increases as more consumers were using Internet networks to access their bank accounts (Ahmed, Streimikiene, Channar, Soomro, & Streimikis, 2021; Raza, Umer, Qureshi, & Dahri, 2020; Sleimi, Musleh, & Qubbaj, 2020). Customer loyalty is demonstrated by the willingness to recommend to friends, to someone seeking information, and to conduct research with a different object in Islamic banks' online services (Indriastuti, Dwi Putri, Robiansyah, & Anwar, 2022).

2.3 Underpinning Theory

Lazarus' (1991) CMR theory is used in this study to provide theoretical support for the relationship between service quality, and customer loyalty to e-banking services. According to this theory, cognitive assessment, and emotional response are related. Cognitive orientation occurs when people evaluate their environment based on their goals, beliefs, and values, which results in an emotional response to the cues they encounter. They contend that service quality is linked to cognitive evaluations of services, whereas customer responses, such as purchase intention, and customer loyalty, are viewed as emotional responses (Shankar & Jebarajakirthy, 2019).

This study suggests that E-Banking Service Quality (EBSQ) is a cognitive evaluation and customer loyalty is an emotional response. E-banking customers evaluate environment cues and EBSQ dimensions comprising security and privacy, efficiency, responsiveness and communication, and site organisation). This evaluation results in e-banking loyalty, a behavioural response to the environment and services.

2.4 Influence EBSQ dimensions on e-Customer Loyalty

As aforementioned, EBSQ will increase customer loyalty to e-banking services. In this section, the researchers examine the relationship between EBSQ dimensions and customer loyalty. According to the literature, the main dimensions of EBSQ are security and privacy, efficiency, responsiveness and communication, and site organisation (Amin, 2016; Lotko, 2022; Shankar & Jebarajakirthy, 2019). Therefore, these four dimensions served as the EBSQ dimensions in this study.

The first EBSQ dimension is security and privacy, which refers to the degree to which customers believe that the site is safe from intrusion and that personal information shared over the platform is protected (Hussien & El Aziz, 2013). Customers are more likely to trust online banking service providers if they ensure safe transactions and the privacy of personal information (Shankar & Kumari, 2016). A transparent privacy and security policy encourages positive consumer reactions to the service provider (Orel & Kara, 2014). As a result, the following hypothesis is proposed;

H1: Security and privacy positively influence customer loyalty to online banking providers.

The next EBSQ dimension is efficiency in digital banking websites, which refers to the percentage of completed banking transactions versus terminated banking transactions. Users are more loyal and satisfied when their transactions are completed efficiently every time. Moreover, according to the research conducted by Amin (2016), EBSQ's most important factor is efficiency. As a result, the following hypothesis is proposed;

H2: Efficiency has positively influenced customer loyalty to online banking providers.

The next EBSQ dimension is responsiveness, which refers to the speed at which operators of online banking respond to users of the service (Fauzi & Suryani, 2019). It is also

a significant variable that can be used to assess the quality of bank services (Tianxiang & Chunlin, 2010). Users are more likely to stay when their complaints are addressed and their demands are met on time. As a result, the following hypothesis is proposed;

H3: Responsiveness and communication positively influence customer loyalty to online banking providers.

The next EBSQ dimension is site organisation, in which service providers design their websites to provide in-depth information, reduce search efforts, and increase customer interactivity. This type of site organisation will boost customer trust in e-commerce platforms and encourage them to become loyal to online service providers (Shankar & Jebarajakirthy, 2019). As a result, the following hypothesis is proposed;

H4: Site organisation positively influences customer loyalty to online banking providers.

3. Methodology

The conceptual framework utilised in this research is depicted in Figure 1. The model is constructed by using factors of the e-banking service quality model: Security and Privacy, Efficiency, Responsiveness and Communication, Site Organisation, and one dependent variable of e-customer loyalty.

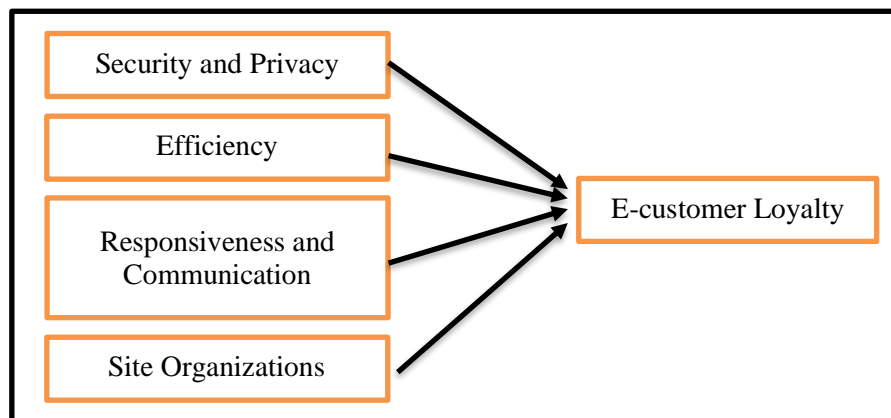


Figure 1. Conceptual Framework of E-customer Loyalty on E-banking Service

3.1 Measurement instrument

The questionnaire was first validated by educationalists, and then it underwent pilot testing to receive additional validation. This sample of this study consists primarily of 145 students from private, and public universities in Selangor who have used online banking and e-services. The state of Selangor was chosen since it has the largest density of Islamic banks and higher learning institutes compared to other states (Farhan et al., 2020; Mohd Thas Thaker et al., 2022). The sample of respondents meets the specific requirement, so they were asked to participate in the study via a google form. Thus there are 37 items to represent the five constructs. A five-point Likert scale ranging from Strongly Disagree (1) to Strongly Agree (5) was employed in the questionnaires to allow respondents to give their responses to each item. The items for security and privacy, efficiency, responsiveness and communication, site organisation, and e-customer loyalty were adapted from Amin (2016) and Hammoud et al.

(2018). Moreover, data were collected along with the sample attributes such as gender, age, education level, experience of using internet banking, usage of the internet, and devices usage of the online transactions through a non-probability sampling technique (convenience sampling). This study used convenience sampling because it was manageable to collect data from available users. Ethical considerations were made by ensuring that respondents' information was kept private and responses were voluntary. The conceptual model was validated using SPSS, which evaluated descriptive, Pearson correlation, and multivariate linear regressions.

3.2 Demographics

The sample represents the responses of 145 students from three higher education institutions in Selangor. The findings of the data collection are presented in Table 1, which shows that 59.3% of the respondents were female. According to the data on respondents' ages, the majority of respondents are students aged 22 to 24 years old, making up 48.3% of the total population. Furthermore, 60.7% of respondents have at least a bachelor's degree. The majority of students (97.9%) have used some form of online banking transaction to determine their respondents' experience with online banking services. The proportion of respondents who used e-banking services less than three times per week is 69 (47.6%). A smartphone is used by 93.1% of respondents to perform online banking transactions.

Table 1. Profile of respondent (N-145)

Demographics	Frequency	%
<i>Gender</i>		
Male	59	40.7
Female	86	59.3
<i>Age</i>		
18-21	48	33.1
22-24	70	48.3
25-28	24	16.6
29 above	3	2.1
<i>Level of education</i>		
Diploma	40	26.7
Degree	91	60.7
Master	2	1.3
Others	17	11.3
<i>Have you previously used e-banking service in past?</i>		
Yes	142	97.9
No	3	2.1
<i>How often do you would use the e-banking service?</i>		
More 7 times a week	23	15.9
4-6 times a week	48	33.1
Less than 3 times a week	69	47.6
Others	5	3.4
<i>What are the device used to make online transactions?</i>		
Personal computer	10	6.9
Smartphone	135	93.1

Table 2. Cronbach Results (N=145)

Variables	Items	Std. Deviation
Security and Privacy $\alpha = 0.902$	I feel completely safe when making transactions on the website of online banks.	0.815
	E-banking services do not allow others to access my accounts.	0.739
	E-banking service provides high protection for my banking transactions.	0.747
	E-banking service is secured and safe from any fraud or hacking.	0.925
	The security devices of the E-Banking services protect the data that are sent by me.	0.755
	E-banking services offers secure personal privacy.	0.736
	I feel secure while making transactions through the Internet.	0.798
	My E-banking site does not share my personal information with other sites.	0.843
Efficiency $\alpha = 0.901$	The use of E-banking services is time saving.	0.658
	The service delivered through the E-banking services is quick.	0.666
	I can complete quickly any transaction through the E-banking service channels.	0.637
	I found that E-banking services is easy to use.	0.661
	E-banking services are provided in various language.	0.891
	Learning to operate the E-banking system is easy for me.	0.739
	My Interaction with the E-banking system is clear and understandable.	0.742
I find the E-banking system to be flexible to interact with.	0.727	
Communication and Responsiveness $\alpha = 0.920$	E-banking services are available 24/7.	0.969
	E-banking services respond immediately to clients' requests.	0.901
	Help is immediately available if there is any problem.	0.958
	E-banking services provide answers to your questions.	1.010
	Bank deals gently with customer complaints about electronic service.	0.896
	Our requests are handled promptly.	0.860
	Quick confirmation.	0.801
The website customer service representatives are skillful and well-experienced.	0.843	
Site Organization $\alpha = 0.936$	Website of online banks design is user friendly.	0.750
	I can get on to the website of online banks quickly.	0.732
	The website of online banks is well organized.	0.763
	The website of online banks is simple to use.	0.699
	The speed of logging into account is fast.	0.778
	The delivery of online service is just-in-time.	0.819
	It is easy to find all important information from the bank's website.	0.805
The information provided on the bank's website is adequate accurate.	0.800	
e-Customer Loyalty $\alpha = 0.933$	I will recommend the online banking to other people.	0.755
	I prefer the online banking above others.	0.766
	I would like to say positive things about online banking to other people.	0.711
	I would recommend online banking to someone who seeks advice.	0.796
	I intend to continue using the online banking.	0.723

To test the reliability of internet banking service quality, and e-customer loyalty in instruments, Cronbach's α coefficient was computed as shown in Table 2 above. The coefficient α exceeded the minimum standard of 0.70 (Nunnally, 1979), which indicates that it provides a good estimate of internal consistency. The coefficient α obtained greatly exceeded the minimum acceptable values of 0.902, 0.901, 0.920, 0.936 for the internet banking service quality dimensions (security and privacy, efficiency, communication and responsiveness, and site organization). Meanwhile, for e-customer loyalty, the coefficient α obtained values that exceed the maximum value suggested (0.933). The values indicate that the data set is highly reliable.

The Pearson coefficient values show how much independent variables influence dependent variables, while their sign, size, and significance determine the hypotheses that exist between the variables (Solutions Statistics, 2022). Table 3 shows the results of the overall Pearson correlation matrix between four independent variables (security and privacy, efficiency, communication and responsiveness, and site organization) and the dependent variable (e-customer loyalty). The correlation between security and privacy, efficiency, communication and responsiveness, and site organisation and e-customer loyalty is strong at the level of significance 0.05 with positive p-values of 0.557, 0.653, 0.642, and 0.666, respectively. The findings support the findings of Raza et al. (2020), who discovered a positive relationship between security and privacy, efficiency, communication and responsiveness, site organisation, and e-customer loyalty.

Table 3. Pearson Correlation Matrix

	Security and Privacy	Efficiency	Communication and Responsiveness	Site Organization
Security and Privacy				
Efficiency	0.563**			
Communication and Responsiveness	0.623**	0.485**		
Site Organization	0.590**	0.519**	0.719**	
e- Customer Loyalty	0.557*	0.653**	0.642**	0.666**

** Correlation is significant at the level 0.05 (2-tailed)

Furthermore, as shown in Table 4, R-square values indicate the predictive ability of the model's constructs. Security and privacy scored an R-square of 0.310, efficiency scored 0.426, communication and responsiveness scored 0.412, and site organisation scored 0.444, confirming the model's predictive ability and all four hypotheses related to antecedents of e-banking service quality in this study.

This study used an ANOVA model to test the validity of the research hypotheses, as shown in Table 4. As illustrated in Table 4, the significance level is 0.000 ($p < 0.05$), indicating that hypothesis H0, predicting that there is no significant relationship between e-banking service quality and e-customer loyalty, has been rejected, while hypothesis H1-H4 predicting that e-banking service quality has a positive impact on e-customer loyalty in Islamic banks, has been accepted.

Table 4. Model Summary and Hypotheses Relationships

	Model Summary				Anova	
	R	R Square	Adjusted R Square	Std. Erros of the Estimate	F	P-Value
Security and Privacy	0.557	0.310	0.305	2.701	64.251	0.000
Efficiency	0.653	0.426	0.422	2.463	106.183	0.000
Communication and Responsiveness	0.642	0.412	0.407	2.494	100.034	0.000
Site Organization	0.666	0.444	0.440	2.425	114.169	0.000

4. Findings and Discussion

The aforementioned findings indicate that all of the hypotheses are supported because they are all significant. H1 ($\beta 0.557$, $p < 0.05$), which represents the relationship between security and privacy and e-customer loyalty, is positive and significant; thus, the hypothesis is accepted. These findings are consistent with the findings of Hammoud et al. (2018) and Shankar and Jebarajakirthy (2019). The results show that by ensuring security and privacy, Internet banking can increase client loyalty through ease of transactions and convenience. They are more concerned with online reliability, privacy, and security than with website aesthetics. Mohd Zulkifli et al. (2021) discovered that customers are concerned about the security and privacy of online banking, where irresponsible parties can easily obtain their personal information, as well as the growing problem of scammers and banking data hacking incidents. Furthermore, due to banking fraud, such as the Macau scammer, customers are extremely conscientious about safeguarding personal banking information such as their username, PIN number, and password. They also demonstrated that cybercrime has a significant impact on bank operational systems, with numerous consequences including financial costs and intangible losses (Mohd Zulkifli et al., 2021).

The association of efficiency and e-customer loyalty, shown by H2 ($\beta 0.653$, $p < 0.05$), is positive and significant and hence the hypothesis is accepted. These outcomes are similar to the results of Hammoud et al. (2018). Yusufarto (2021) discovered that the efficiency of Islamic banks is determined by how the system's ease, accessibility, and speed can facilitate transactions and other functions that result in higher levels of customer loyalty, both in behaviour and attitude. Islamic e-banking improves transaction efficiency, reduces service costs, and saves time, primarily on transportation costs. Bank managers should pay special attention to the perceived ease of use of e-banking services because it influences the bank's cost-effectiveness and necessitates a positive customer attitude receive (Khan & Alhumoudi, 2022). Customers are adequately informed of the most recent advancements in banking services and technology, and they have high expectations for the quality of service they (Carranza et al., 2021). E-customer loyalty grows when customers use e-banking services frequently and with high satisfaction (Ahmed et al., 2021).

H3 ($\beta 0.642$, $p < 0.05$) represents a positive and substantial relationship between communication and responsiveness and e-customer loyalty, and thus it is accepted. These findings are consistent with those of Afifah and Kurniawati (2021), Fida et al. (2020), and Hammoud et al. (2018). The responsiveness of Islamic bank services is the primary attraction for Islamic bank customers in Indonesia and one of the main features of the CARTER model

experienced by Islamic bank customers (Afifah & Kurniawati, 2021). In Omani Islamic banks, the responsiveness of the bank officers is required on time, with promptness and willingness to act for the advantage of the customers (Fida et al., 2020). Yusfiarto (2021) proposed that system availability with properly functioning platforms could alert to technical constraints and strengthen Islamic banks' business processes. According to Raza et al. (2020), e-banking clients affirmed that e-banking responded to their needs much faster than other traditional banking methods, such as online bill payment. Hammoud et al. (2018) proposed that the bank's rapid response e-banking service includes the following: (i) the e-banking system can properly control and operate the service; (ii) the e-banking channels can guide customers in the event of failed operations; (iii) it can cover a quick solution for any possible error in e-banking transactions; and (iv) it can answer customers' questions on the spot.

H4 ($\beta 0.666$, $p < 0.05$) indicates a positive and significant relationship between site organisation and e-customer loyalty. This result is consistent with previous research (Amin, 2016). Site organisation is the main factor in determining the quality of an e-banking service, hence a website's functionality and e-customer loyalty are directly correlated to how engaging and well-organized it is. Malnaad et al. (2022) discovered that navigation and aesthetics are the most important aspects of e-banking web usability. The size and layout of a website make up for the lack of physical evidence or atmosphere in an online space for buying and selling. It measures how well the website's content is organised and how visually appealing the site is (Firdous & Farooqi, 2019). Selvanathan et al. (2016) proposed that internet banking providers build their web portals to be more user-friendly and acceptable for all age categories of customers, given that perceived ease of use is the most important factor for users to adopt internet banking. As a result of their hectic schedules, residents of urban areas did not have the time to perform their financial transactions in bank branches. Therefore, high levels of electronic service quality in web-based services played an important role in increasing overall customer loyalty to the service provider (Malnaad et al., 2022).

5. Conclusion and Implications

The purpose of this study is to investigate the impact of e-banking service quality on customer loyalty in the Selangor Islamic banking sector. Similar studies had been conducted for other countries and markets, as evidenced by the literature review; however, similar studies in the context of the Selangor Islamic banking sector are scarce. The study took a quantitative approach, with a survey distributed to 145 university students who were representatives of bank clients in Selangor, and the data were analysed using SPSS. The findings indicate that the data supported the four hypotheses in this study, and the main contribution of this study was that security and privacy, efficiency, communication and responsiveness, and site organisation, as e-banking service quality variables, were the main predictors of customer loyalty in this industry.

In light of the increased focus on e-banking services research in Selangor, the findings of this study will contribute to a better understanding of what and how Selangor Islamic banks may leverage advancements in information technologies to develop services that meet the expectations of Selangor customers. Geographically, the states of Kuala Lumpur and Selangor (Klang Valley) are the main hubs for 16 Islamic banks in Malaysia (Mohd Thas Thaker et al.,

2022). Since different Islamic banks allocate their costs for internet banking services differently, the services delivered may vary. This study gives senior management of Islamic banks guidelines for developing novel strategies to compete with the conventional banking sector as well. Therefore, the main purpose of e-banking is to introduce more services and products that will entice more customers to use the bank's products and services and increase revenue inflow by expanding the bank's service range (Sleimi, Musleh, & Qubbaj, 2020).

To expand on this research, it is suggested that methods to improve the security and privacy, efficiency, communication and responsiveness, and site organisation of "e-banking" services be investigated, particularly in other states in Malaysia. Furthermore, the meaning of "security and privacy, efficiency, communication and responsiveness, site organisation" may differ across states and even within the country, necessitating a thorough examination of this and other constructs in a variety of cultural contexts. A study of human values in the electronic banking system is required to meet the increased demand, so banks are anticipated to increase their spending on Internet banking technology.

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