

Investigating E-Banking Service Quality in Islamic Banking: A Moderated Mediation Approach

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Abstract

The main objective of this study is to analyze the relationship between the quality of e-banking services and customer loyalty through e-satisfaction. It also aims to consider the role of self-efficacy as moderation from the perspective of internet banking and mobile banking in Islamic banking. This study employs WebQual™ and E-S-Qual as a measurement scale for e-banking service quality. In addition, the study also utilizes the moderated mediation approach to verifying the variables that influence customer loyalty in the context of Islamic banking e-platforms. Empirically, the findings show that self-efficacy, when operating as a moderator, has a considerable impact on the nexus between e-banking service quality and customer loyalty via e-satisfaction. This study also provides several theoretical contributions to the existing literature that underline the insight into loyalty, e-banking service quality, and customer psychological characteristics.

Keywords: *Islamic Banking, E-Banking, WebQual™, E-S-Qual, E-Satisfaction, Loyalty, Moderated-Mediation*

INTRODUCTION

Advances in information technology with the use of the internet have changed perceptions and service methods from a physically oriented system to a digitally oriented service system (Shaikh & Karjaluo, 2015). This progress has an impact on the orientation of banking services in general; banks are now promoting internet-based services to boost their profitability. Recent literature has widely discussed features such as internet banking, mobile banking, and quick-response (QR) codes (Amin, 2016; Shankar & Jebarajakirthy, 2019; Yi & Gong, 2008). This platform is commonly referred



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to as e-banking, which is a process of interaction between banks and customers using an online connection as a base without physical contact between humans (Jayawardhena, 2004). Initially, e-banking only shared banking information. However, currently, it is developing and transactional oriented; the service has expanded to sale and purchase transactions, investment, insurance, bill payment, and downloading of checking accounts (Tan & Teo, 2000). In order to maintain customer loyalty, it is essential to consistently enhance and strengthen commitment and trust (Lestari & Saibil, 2022). The emerging competition has prompted banks to provide high-quality e-banking services, not only from the technological side but also to consider aspects of consumer characteristics. This is considered to be a basic strategy for banking to achieve a competitive advantage (Jayawardhena, 2004; Shankar & Jebarajakirthy, 2019). Therefore, the evaluation of e-banking service quality needs to consider aspects of customer perceptions so that this perception category can refer to the unique characteristics of each customer (Arcand et al., 2017; Shankar & Jebarajakirthy, 2019; Yi & Gong, 2008). However, there are still few studies that have investigated the dimensions of e-banking service quality by considering customer characteristics; thus, this study focuses on this gap.

In previous studies, measures of service quality have been extensively investigated, with a particular focus on customer behavior indicators, such as customer satisfaction and loyalty in the banking industry (Al-Hawari, 2011; Amin et al., 2011; Omoregie et al., 2019). However, previous studies have failed to adequately represent the contextual aspects of electronically delivered services. Furthermore, the influence of consumer characteristics on e-service quality as a determinant of customer loyalty has not been examined so far in the literature (Yi & Gong, 2008). Electronic customer satisfaction (e-satisfaction) plays a crucial role as a mediator in influencing electronic service quality (e-service) on electronic loyalty (e-loyalty) (Rezeki et al., 2023). Thus, the main objective of this study is to analyze the relationship between the quality of e-banking services and customer loyalty through e-satisfaction and to consider the role of self-efficacy as moderation from the perspective of internet banking and mobile banking in Islamic banking. This study also suggests a moderating effect of self-efficacy; variations in customer characteristics are thought to represent different perceptions of each consumer. Furthermore, this research is based on WebQualTM and E-S-Qual as a measurement scale for e-banking service quality, and the moderated

mediation approach is an approach to verifying a determinant of customer loyalty in the context of Islamic banking e-platforms.

LITERATURE REVIEW

Islamic bank electronic platforms

The Islamic banking industry is one of the financial industries with fast growth. Islamic banking services are not limited to Muslims, as individuals from many other religious backgrounds can take advantage of its various benefits (Amin et al., 2011). Products in Islamic banks are the same as in conventional banks. The difference is that Islamic banks follow Islamic law in their operations and strictly prohibit *riba* (usury) (Dusuki & Abdullah, 2007). Banking, in its development, has used the internet transaction method. The use of cost-cutting measures by banks not only yields benefits for the financial institution but also offers enhanced convenience to customers (Shaikh & Karjaluo, 2015). Online services at Islamic banks are divided into ATMs, debit cards, wire transfers, customer service, and electronic funds. The use of technology greatly minimizes risk but still provides the best service (Frame & White, 2002). Increasing the use of technology that will lead to a mobile business model will realize branchless banking, thereby enabling low-cost and real-time transactions through proven safe networks (Benamati & Serva, 2007).

Many initiatives to expand the internet banking market have been carried out in the Middle East, where small and medium-sized banks have attempted to be present online. Furthermore, studies show that nearly 20% of customers are willing to move to other financial institutions if the bank fails to offer services online (Hanafizadeh et al., 2012). This shows that banks cannot refuse internet banking, especially due to increased financial literacy and the acceleration of technology in the world. Internet banking provides common facilities in banking, including accessing accounts, transferring funds, and buying financial products online. In its operation, internet banking can also serve complaints from customers with fast service and higher quality (Shih & Fang, 2006). Banks are encouraged to improve internet banking services to assist them in competitive competition with other banks, benefit from the internet sector, gain traction from new customers, strengthen relationships, and achieve significant transaction cost cuts (Tumewah et al., 2020). Apart from internet banking, there is such a thing as mobile banking, one of the banking products in the digital era (Yousafzai & Yani-de-Soriano, 2012). The

development of mobile banking is due to increasing innovation and product offerings. In addition, another reason is that the number of cell phones is evenly distributed throughout the world (Almansour & Elkrggli, 2023; Kleppang et al., 2023; Nurochani et al., 2023; Rezeki et al., 2023; Tetteh, 2022) which contributes to enhanced security and the effectiveness of financial transactions made online. As a result, most companies use money online (Laukkanen & Kiviniemi, 2010; Tam & Oliveira, 2016). Hence, most business companies now use financial transactions from cellular banking platforms.

Customers Loyalty

The latest technology in the current revolutionary era has a significant impact on the ease of determining bids based on low costs and high transparency. This complicates customer loyalty in every company (Grewal et al., 2017; Närvänen et al., 2020; Yusfiarto et al., 2021). Loyalty is defined as a manifestation of purchasing attitudes or behavior; therefore, from the company side, measuring customer attitudes and behavior preferences is necessary to increase their convenience (Watson et al., 2015). Even though the price of a product or service is increasing, the level of customer loyalty can be determined by the intention and desire to recommend it to others (Yoon & Uysal, 2005). Satisfaction and loyalty are two closely related things. Several studies have shown that the higher customer satisfaction, the greater customer loyalty to a company (Yusfiarto et al., 2023). In the banking context, loyalty can be defined as protection that customers often do to certain banks for a long time (Ladhari, 2010; Yusfiarto et al., 2022). The improvement of their e-banking services aims to enhance customer satisfaction (Almansour & Elkrggli, 2023). Loyalty is a major concern in the banking industry due to high client expectations and intense competition between banks (Rasheed et al., 2015). Therefore, every financial institution needs to define factors that have implications for customer satisfaction to increase customer loyalty (Pont & McQuilken, 2005). Increasing the ability of banks to provide comfort, quality of service, and speed of service has been proven to significantly contribute to the business by implementing mechanisms for the use of technology and social media (Alalwan et al., 2018; Filo et al., 2015). Aspects included in it are communication, relationship management, and customer (Filo et al., 2015). The company believes that using electronic media is a strategy to expand two-way communication between companies and their customers. This media tends to easily present the subject textually, visually, and verbally (Okazaki & Taylor, 2013).

Self-efficacy

Self-efficacy is associated with a person's confidence in their contributions to an organization or business (Bandura, 2012). Self-efficacy also concerns social cognitive theory, the processes they work in an organization, and how to develop and believe in carrying out changes on behalf of personal and social. Regarding social theory, self-efficacy adopts a casual causal structure based on causation (Bandura, 2012; Yusuf, 2011). Impactful experiences are potential sources for creating and strengthening self-efficacy (Kleppang et al., 2023). The evaluation of self-confidence may be inferred based on the individual's performance level, which can range from low, moderate, to high difficulty. Someone who judges themselves as unable to do a difficult performance tends to find it challenging to complete their work effectively (Yeo & Neal, 2006). On the other hand, someone with low self-efficacy usually thinks it is difficult to do tasks or responsibilities given to him; this belief will encourage stress and depression as well as narrow one's vision in his/her works (Lunenborg, 2011). Strong self-efficacy is carried out by employees to increase their achievement. Thus, employees work professionally to handle tasks and see this as a challenge that must be conquered rather than a problem that must be avoided (Cherian & Jacob, 2013). Based on social theory, individuals with high self-confidence tend to put more effort into action, last longer in overcoming problems and have more planned long-term goals than people who are not confident (McKee et al., 2006). Additionally, self-efficacy is related to how humans manage their behavior with a strong motivation and desire to complete tasks. This allows a person to overcome every challenge and failure in their life. In the context of electronic services, self-efficacy refers to the ability of their customers to make electronics successful in their service processes. Consequently, self-efficacy emerges as a significant component in the assessment of Electronic Service Quality (ESQ) (Monswé et al., 2004).

E-Satisfaction

Customer satisfaction has been studied intensively, especially in the field of marketing from traditional to modern contexts (Al-Hawari, 2011; Ganguli & Roy, 2011). The customer satisfaction variable has a significant impact; thus, it can be concluded that customer satisfaction is the most dominant factor in influencing customer loyalty (Nurochani et al., 2023). E-satisfaction can be defined as a customer assessment of technology services in connection

with previous purchases made. E-satisfaction is one of the important factors determining e-loyalty in the online and offline context (Li et al., 2015). Regarding the relationship complexity between customers and bank managers, the concept of satisfaction can be viewed from a cumulative point of view and is defined as the overall evaluation of a customer for a product or service (Ribbink et al., 2004). Satisfied customers tend to have higher service usage, have strong reuse intentions, and often want to recommend products or services to their acquaintances and/or preferred ones (Amin et al., 2011). This is also supported by research that states that customers who have high levels of satisfaction tend to buy or reuse products and services in the future (Cronin & Taylor, 1992).

Satisfaction is proven to have a positive effect on loyalty and a positive effect on trust; this influence also occurs in the online service environment (Ribbink et al., 2004). Previous studies have proven that the quality of electronic services indirectly affects the high level of customer satisfaction regarding a service or product (Ganguli & Roy, 2011). This review is supported by a statement that customer satisfaction is a simultaneous and prolonged result of using a service; customers can measure their satisfaction level after using the provided services (Gounaris et al., 2010). In addition, previous studies have identified several factors that determine customer satisfaction in Islamic banking services. Research conducted at Islamic banks in Malaysia, service efficiency, the work ethic of banking managers, security, and efficiency in transactions are the main factors affecting customer satisfaction with Islamic banking services in Malaysia. Furthermore, the level of satisfaction at a certain level has indicated that the results in the use of internet banking services have a positive and significant ethos effect on loyalty (Floh & Treiblmaier, 2006).

Electronics Service Quality

The quality of electronic services is one of the essential factors in determining the level of customer satisfaction with the business services that have been used. Service quality also directly affects customer loyalty in the use of electronic services (Zeithaml et al., 1996). For instance, previous research employed a variety of different approaches in defining e-service. E-service can be defined as the best service provided to consumers through interactive technology (Rust et al., 2004). Based on previous research, it has also been carried out that has developed a scale that can measure service quality electronically (E-S-Qual); the scale measures the extent to which

technology facilitates users efficiently and effectively (Parasuraman et al., 2005). In the context of technology, the quality of electronic services is defined as an estimate of a user's overall assessment of services provided via the internet (Parasuraman et al., 2005; Rust et al., 2004). The dimensions or factors that determine service quality can be divided into three core categories: these include a combination of responsiveness, reliability, assurance, and empathy (Rust et al., 2004). Meanwhile, other studies suggest four important dimensions in evaluating electronic services: personal needs, organizational sites, user-friendliness, and efficiency (Herington & Weaven, 2009; Parasuraman et al., 2005). Exploration of the quality of electronic services is also carried out in the banking world. Nisha (2016), in his research, measures the quality of mobile banking services using seven dimensions of E-S-Qual which refer to system quality, information quality, and mobile banking service interaction quality.

On the one hand, the website is a medium of information, communication, and publication that can influence public or customer perceptions to use the services of a product or service (Parasuraman et al., 2005). WebQual™ is a method of measuring service quality based on the perceptions of users or customers of an electronic service that has been developed since 1998 and has undergone several improvements in the preparation of its dimensions (Medyawati & Mabruri, 2012). WebQual™ has three approaches to measurement: site usability, quality information, and the strength of the interaction of the services provided to customers. Although WebQual™ is closely related to the subjective impression of customers. However, these three approaches manifest a framework for assessing the electronic offerings' role (Barnes & Vidgen, 2002; Rust et al., 2004). The WebQual method is a development of e-service quality that was studied in previous studies (Parasuraman et al., 2005). The WebQual™ research instrument was developed using the Quality Function Development method (Medyawati & Mabruri, 2012). Research on the evaluation and assessment of service quality on application-based websites shows that there is a relevance between the factors contained in WebQual™ (Loiacono et al., 2007; Yi & Gong, 2008).

Hypothesis Development

E-Banking Service Quality Effect on Customer Loyalty

This study uses an adaptation of the WebQual™ scale recommended by (Loiacono et al., 2002). The use of WebQual™ is considered appropriate

in measuring the quality of internet banking, which is website-based in its implementation. Loiacono et al. (2007) argue that the main advantage of the WebQual™ scale is that it can provide a detailed analysis of site weaknesses. Meanwhile, WebQual™ could indicate whether the ease-of-use problem arises from problems with ease of understanding or intuitive operations. Previous studies have also indicated that higher quality of internet banking services contributes to an increase in the loyalty of Islamic banking customers (Amin, 2016; Saibil, 2020; Sathiyavany & Shivany, 2018). Thus, it is hypothesized that:

H₁: Internet banking quality (WebQual™) has a positive effect on Islamic banking customers loyalty

This study also measures mobile banking service quality by adopting the E-S-Qual scale (Parasuraman et al., 2005). Nisha (2016) measures the quality of mobile banking services using seven dimensions of E-S-Qual, which refer to system quality, information quality, and mobile banking service interaction quality. The results show that the e-service quality dimensions, such as reliability, privacy, information, responsiveness, and empathy, can significantly affect the performance of the mobile banking system. In line with this result, some previous studies underlined that the performance of mobile banking in terms of the system can develop customer commitment which in turn can influence customer behavior intentions in using mobile banking services (Arcand et al., 2017; Ratna, 2011; Yusfiarto et al., 2021). This study, therefore, hypothesizes that:

H₂: Mobile banking quality (E-S-QUAL) has a positive effect on Islamic banking customers loyalty

Self-efficacy as Moderation Effect

Self-efficacy is associated with positive outcome assessments; the stronger the belief about an individual's self-efficacy, the more likely that person will achieve the desired result (Monswé et al., 2004). In theory, strong self-efficacy is associated with perceived more positive outcomes and fewer negative outcomes (Luszczynska et al., 2005). Hence, Electronic Service Quality (ESQ) outcomes are strong predictors for customers with high self-efficacy. By having high self-efficacy, customers are expected to be more confident in using electronic services compared to customers who do not have high self-efficacy (Dabholkar & Bagozzi, 2002). Customers with high

self-efficacy can easily handle the problem of choosing from available options when making transactions using electronic services, but it is more difficult when conveying aspects of ESQ (Faassnacht & Koese, 2006; Nugroho et al., 2017; Shankar & Datta, 2018). Furthermore, Yi and Gong (2008) research confirms that customer satisfaction obtained afterward empirically affects loyalty moderated by the level of customer self-efficacy. This study, therefore, hypothesizes that:

H₃: Self-efficacy moderates the effect of e-satisfaction on Islamic banking customers loyalty

Moderated Mediation Effect

The development of internet technology has implications for the focus of research on ESQ, such as mobile banking and internet banking. Previous research has repeatedly confirmed that the ESQ pathway significantly affects customer satisfaction and loyalty and impacts customer financial attitudes and behavior (Fassnacht & Koese, 2006; Yusfiarto et al., 2021). The ESQ model by Yi and Gong (2008) states that overall ESQ (environment, delivery, outcome) has an impact on customer satisfaction. Then, customer satisfaction has implications for customer loyalty depending on the level of psychological characteristics (self-efficacy). Similar to this view, Lee et al. (2008) offers a path of e-satisfaction with the repurchase focus on e-commerce. This study assumes that ESQ is successful as a determinant of customer repurchase in e-commerce, while computer self-efficacy and anxiety as moderator variables are important factors that need to be considered. This study, therefore, hypothesizes that:

H₄: Self-efficacy moderates the effect of mobile banking service quality (E-S-Qual) on customer loyalty via e-satisfaction.

H₅: Self-efficacy moderates the effect of internet banking service quality (WebQual™) on customer loyalty via e-satisfaction.

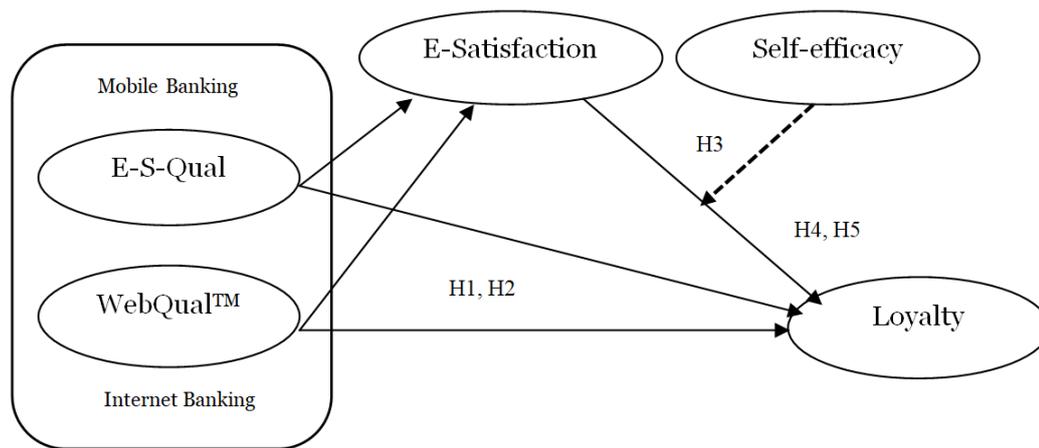


Figure 1, Conceptual Model

RESEARCH METHOD

Profile Respondent

This study used a total sample of 267 respondents using a purposive random sampling approach (see Table 1). The criteria used are Islamic banking consumers, specifically internet banking and mobile banking platforms users, for at least a year. The sample focuses on the database of Islamic bank customers and communities. This practice is used in order to get a full definition of the study findings comprehensively. The spectrum of respondents in this study was based on the job, the bank used, and the domicile of the province in Indonesia. The samples used the provision of the number of indicators multiplied by 5-10 (Ferdinand, 2002).

Table 1. Frequency respondent

Spectrum	Amount	Percentage
<i>Job</i>		
Student College	111	42%
Entrepreneurs	35	13%
Professional	121	45%
<i>Domicile by province</i>		
Special Region of Yogyakarta	74	28%
Central Java	66	25%
East Java	24	9%

West Java	29	11%	Investigating E-Banking Service
Special Region of Jakarta and Banten	47	18%	
Lampung	27	10%	
<i>Bank used</i>			
Bank Syariah Indonesia	201	75	
Bank Muamalat	45	17	
Bank BCA Syariah	21	8	

Analysis techniques and measurement

This study uses a quantitative approach to verify the research model. The process that has been done is divided into three stages. First, an analysis of the literature on loyalty, self-efficacy, e-satisfaction, and e-service quality is carried out to establish an empirical survey. Second, the scale of measurement in this study is carried out comprehensively based on previous research. Furthermore, the research statement is revised according to the context and research model. This study uses a categorical scale (five-point Likert), where the variation of answers is 5 (strongly agree) to 1 (strongly disagree). Third, the research questionnaire was distributed using an online-based survey, namely the Google form platforms. This study uses twenty-nine measurement items with five variables (see Table 2); Loyalty uses four measurement scales adapted from Foster and Cadogan (2000); E-satisfaction uses four measurement scales adapted from Wen et al. (2014); Self-efficacy uses four measurement scales adapted from Chang et al. (2017); WebQual™ using nine measurement scales adapted from Loiacono et al. (2002), and the last variable E-S-Qual uses eight measurement scales adapted from Nisha (2016).

The data that has been obtained were analyzed using the AMOS 23.0 and SPSS software. The data normality and multicollinearity tests were carried out first before the hypothesis was put to the test. This analysis was conducted to verify normality and the absence of symptoms of multicollinearity in the data. Furthermore, a Confirmatory Factor Analysis (CFA) procedure was applied to verify the validity and reliability of the data. Hypothesis testing in this study uses a moderated mediation approach (Model 14) with conditional process modeling (PROCESS macro). Hayes' conditional PROCESS analysis, also known as "moderated mediation" analysis, predicts a mediation model that allows mechanism moderation using ordinary least squares regression-

based path analysis (Hayes & Rockwood, 2020). The PROCESS macro introduced by Hayes is a computational tool with models pre-programmed into a process that separately estimates all path analyses for each equation (Hayes & Rockwood, 2020). The Hayes PROCESS is used because it generates all the necessary statistical files (conditional indirect effect and moderated mediation index) and implements bootstrapping to facilitate inference using these statistics fields (Osei et al., 2019).

RESULT

Normality and Multicollinearity

The normality test is intended to verify the distribution of the data obtained in the study (Jonker & Pennink, 2009). The Skewness and Kurtosis approach were used to verify the normality of the data, while the Variance Inflation Factors (VIF) were used to validate the absence of multicollinearity symptoms. The cut-off value for Skewness and Kurtosis is in the range of ± 2.58 , according to the recommendations from (Field, 2013), while the VIF value is in the range > 5 , as recommended by (Hair et al., 2010). The analysis results show that the construct variables in this study have characteristics that are normally distributed (Skewness: -1.585 to -0.432; Kurtosis: -0.517 to 2.488), while the VIF and tolerance values underline the absence of potential that can interfere with the validity and reliability of the data (see Table 3).

Confirmatory Factors Analysis (CFA)

The Confirmatory Factor Analysis (CFA) is a statistical multivariate procedure used to test whether the constructs represent the variables being measured. This analysis is used to confirm or reject the measurement results in a theory. The advantage of CFA is that it can accommodate the required factors, and the variables measured are related to their latent variables (Hair et al., 2010; Jöreskog, 1969). The results of the analysis show that all loading factor values are at high convergent validity (> 0.70 ; 0.739 - 0.896), while the significance level is in the range < 0.01 .

Regarding reliability tests, this study uses the Composite Reliability (CR) and Cronbach's Alpha (α) approach to verify data reliability. The cut-off value for composite reliability was > 0.70 , following the recommendation of Hair et al. (2010), while the alpha value was > 0.60 , according to the recommendation from Nunnally & Bernstein (1994). Output shows satisfying

results: loyalty (CR = 0.841, α = 0.836), e-satisfaction (CR = 0.911, α = 0.908), self-efficacy (CR = 0.811, α = 0.878), WebQual™ (CR = 0.955, α = 0.955), and E-S-Qual (CR = 0.929, α = 0.909). It can be concluded that the items in the study show reliable results (see Table 4).

Regarding validity tests, this study uses convergent and discriminant validity to verify the validity of the data. Convergent validity is tested by looking at the Average Variance Extracted (AVE) value; the cut-off value on AVE is > 0.50 as recommended by Hair et al. (2010). While discriminant validity is tested by looking at the Fornell-Larcker criterion Hair et al. (2014), where the correlation value between variables does not exceed the diagonal value of the square root AVE. Output showed satisfying results (see Table 3): loyalty (AVE = 0.639), e-satisfaction (AVE = 0.720), self-efficacy (AVE = 0.648), WebQual™ (AVE = 0.704), and E-S-Qual (AVE = 0.620). Meanwhile, the analysis results on discriminant validity show that the overall results are valid (see Table 3).

Table 2. Convergent validity

Variables	$\sqrt{\text{AVE}}$	AVE	MSV	VIF	Tolerance
LYT	0.799	0.639	0.623	-	-
ESQ	0.787	0.620	0.555	2.376	0.421
ESAT	0.849	0.720	0.623	2.969	0.377
SEF	0.805	0.648	0.549	2.459	0.407
WBQ	0.839	0.704	0.582	1.009	0.991

Table 3. Discriminant validity

Variables	Fornell-Larcker criterion				
	LYT	ESQ	ESAT	SEF	WBQ
LYT	0.799				
ESQ	0.692	0.787			
ESAT	0.789	0.745	0.849		
SEF	0.718	0.738	0.741	0.805	
WBQ	0.699	0.624	0.763	0.673	0.839

Table 4. Factor loadings

	Construct	Loadings	α	CR
<i>E-S-Qual (ESQ)</i>			0.909	0.929
ESQ1	I think the confidentiality of my personal information is safe	0.739***		
ESQ2	Mobile banking services operate reliably	0.768**		
ESQ3	Mobile banking has the knowledge to solve my problem	0.756***		
ESQ4	Mobile banking services are helpful	0.804***		
ESQ5	Mobile banking increases my efficiency	0.892***		
ESQ6	Mobile banking increases my productivity	0.832**		
ESQ7	Mobile banking provides me up-to-date banking information	0.757***		
ESQ8	I think mobile banking services will keep their commitments	0.738***		
<i>WEBQUALTM (WBQ)</i>			0.955	0.955
WBQ1	I found the internet banking site easy to use.	0.821***		
WBQ2	My interaction with internet banking is clear and understandable	0.847**		
WBQ3	I find this internet banking site easy to navigate.	0.872***		
WBQ4	Internet banking sites provide accurate information.	0.882**		
WBQ5	Internet banking sites provide relevant information.	0.868***		
WBQ6	Internet banking provide information that is easy to understand.	0.853**		
WBQ7	I feel safe to complete transactions with Internet Banking.	0.799**		
WBQ8	I feel confident that the services received are as promised.	0.824***		
WBQ9	My personal information is safe when using internet banking.	0.782***		
<i>Self-Efficacy (SEF)</i>			0.878	0.881
SEF1	I am confident about using internet-based services	0.832***		
SEF2 even if it doesn't show me how to do it	0.850**		
SEF3 if I've used a similar system before	0.789***		
SEF4	I will not worry about internet-based services	0.745***		

<i>E-Satisfaction (ESAT)</i>			0.908	0.911	Investigating E-Banking Service
ESAT1	I am very satisfied doing transactions with internet-based	0.781***			
ESAT2	I am very satisfied using internet-based services	0.861***			
ESAT3	I am very satisfied with the Islamic banking products	0.852***			
ESAT4	Overall, I am very satisfied with the internet based Islamic bank	0.896**			
<i>Loyalty (LYT)</i>			0.836	0.841	
LYT1	I will be loyal and will not turn to competitors	Dropped			
LYT2	I intend to use Islamic banking products in the future	0.795***			
LYT3	i intend to do more business with Islamic Bank	0.827***			
LYT4	I say positive things about Islamic banking services to other	0.775***			

Notes: **significant at 0.01, ***significant at 0.001

Hypothesis measurement

In the first portion (see Table 5), the output contains the regression of the E-S-Qual variable onto customer loyalty. We see here that the direct effect between E-S-Qual and customer loyalty was statistically significant ($b = 0.3088$, $se = 0.0369$, $p < 0.001$), suggesting that E-S-Qual has a significant positive effect on customer loyalty ($H1 = Supported$). R^2 value indicates that 67 percent of the variance is explained by E-S-Qual in the customer loyalty variable. Furthermore, the output contains the regression of WebQualTM onto customer loyalty. We see here that the direct effect between WebQualTM and customer loyalty was statistically significant ($b = 0.4373$, $se = 0.0430$, $p < 0.001$), suggesting that WebQualTM has a significant positive effect on customer loyalty ($H2 = Supported$). R^2 value indicates that 63 percent of the variance is explained by WebQualTM in the customer loyalty variable.

In the second portion (see Table 5), the output contains the regression of e-satisfaction onto self-efficacy, loyalty, and their interaction. We see here that the interaction between e-satisfaction and self-efficacy was statistically significant ($b = 0.0107$, $se = 0.0049$, $p < 0.05$), suggesting that self-efficacy moderates the effect of e-satisfaction on customer loyalty ($H3 = Supported$). The conditional effect shows a simple slope analysis of the relationship between e-satisfaction and customer loyalty at 3 points along the moderator

scale. The effect is positive and significant at -1SD in the self-efficacy ($b = 0.3373$, $se = 0.0366$, $p < 0.001$). On the mean of self-efficacy, the effect of e-satisfaction was positive and significant ($b = 0.2981$, $s.e. = 0.0354$, $p < 0.001$). In the + 1SD self-efficacy, e-satisfaction was a significant positive predictor ($b = 0.2589$, $se = 0.0354$, $p < 0.001$).

Table 5. Coefficient effect for moderation

Testing Path	b	se	t	p	95%CI
<i>E-S-Qual -> Loyalty, R²= 0.6773, F= 258.4, p < 0.05</i>					
Effect x on y	0.3088	0.0369	8.3669	0.0000	0.2361 to 0.3814
<i>WebQualTM -> Loyalty, R²= 0.5547, F= 135.554, p < 0.05</i>					
Effect x on y	0.4373	0.0430	10.1767	0.0000	0.3528 to 0.5219
<i>E-Satisfaction -> Self-efficacy -> Loyalty, R²=-0.6337, F=130.62, p < 0.05</i>					
E-Satisfaction	0.2981	0.0313	9.5335	0.0000	0.2366 to 0.3596
Self-efficacy	0.0086	0.0388	0.2206	0.8256	-0.0677 to 0.0848
Interaction	0.0107	0.0049	2.1938	0.0290	0.0011 to 0.0202
Notes: CI is confidence interval					

In the third portion (see Table 6), the output provides an omnibus test of the conditional indirect effect (Preacher et al., 2007) reflected in the Index of moderated mediation (Hayes & Rockwood, 2020) of X on Y. If the null of 0 does not fall between the lower and upper limit of the 95% confidence interval, we infer that the indirect effect is conditional on the level of the moderator variable (W). therefore, we infer that self-efficacy significantly moderated the indirect effect of WebQualTM and E-S-Qual on customer loyalty ($H4$ and $H5$ = supported). This outputs portion also contains conditional the indirect effect (IE) of WebQualTM and E-S-Qual (X) on customer loyalty (Y).

The indirect effects at -1SD, mean, and + 1SD. All three indirect effects were positive (at -1SD, $IE= 0.337 / 0.222$; at mean, $IE= 0.298 / 0.195$; at +1SD, $IE= 0.258 / 0.167$) and significant (as the null of 0 does not fall between the lower and upper limit of the 95 percent confidence intervals for each effect. Furthermore (see Table 6), we see tests contrasting the indirect

effect (IE) involving different levels of the moderator (W). The difference between the indirect effect at the mean of the moderator (IE= 0.248 / 0.195) and at -1SD of the moderator (IE= 0.281 / 0.222) is statistically significant (as the null of 0 difference in indirect effect does not fall within the bootstrap 95 percent confidence interval. It indicates that all pairwise contrasts of the IE were significant.

Table 6. Moderated mediation index (Mobile banking service quality)

<i>E-S-Qual (x) -> E-Satisfaction (m) -> Self Efficacy (w) -> Loyalty (y)</i>				
<i>Conditional Indirect Effect</i>				
Self-efficacy	Effect	BootSE	BootLLCI	BootULCI
-3.6747	0.2226	0.0369	0.1531	0.2989
0.0000	0.1952	0.0306	0.1380	0.2584
3.6747	0.1678	0.0312	0.1085	0.2307
<i>Index of moderated mediation:</i>				
Index	BootSE	BootLLCI	BootULCI	
0.0075	0.0041	0.0005	0.0161	
<i>WebQualTM (x) -> E-Satisfaction (m) -> Self Efficacy (w) -> Loyalty (y)</i>				
<i>Conditional Indirect Effect</i>				
Self-efficacy	Effect	BootSE	BootLLCI	BootULCI
-3.6747	0.2816	0.0452	0.1997	0.3778
0.0000	0.2489	0.0380	0.1775	0.3273
3.6747	0.2162	0.0370	0.1449	0.2889
<i>Index of moderated mediation:</i>				
Index	BootSE	BootLLCI	BootULCI	
0.0089	0.0044	0.0014	0.0190	

DISCUSSION

The main objective of this study is to analyze the relationship between e-banking service quality and customer loyalty through e-satisfaction and to consider the role of self-efficacy as moderation from the perspective of internet banking and mobile banking in Islamic banking. Based on the electronic service quality model (Yi & Gong, 2008), we show that e-service quality in internet banking and mobile banking leads to customer loyalty,

supporting the first and second hypotheses. These results align with the studies conducted; the quality of website-based and mobile-based services must be easy to navigate, have adequate information, and guarantee customer privacy and security in transactions. These factors are the main antecedents of increasing Islamic banking customer loyalty (Arcand et al., 2017; Floh & Treiblmaier, 2006; Nisha, 2016; Yusfiarto et al., 2021).

This study also affirms the role of self-efficacy as a moderator in fostering customer loyalty, thereby supporting the third hypothesis. These findings align with the model developed by Yi and Gong (2008), which posits that customer self-efficacy systematically moderates the relationship between electronic satisfaction and customer loyalty (repurchase intention and word-of-mouth). This illustrates that the correlation between e-satisfaction and loyalty varies among customers, contingent on the intensity of self-efficacy levels (Dabholkar & Bagozzi, 2002; Lee et al., 2009; Nugroho et al., 2017). Islamic bank customers with a heightened sense of self-efficacy tend to perceive themselves as competent in surmounting obstacles related to utilizing electronic services. Consequently, they are more inclined to derive satisfaction from the services, driven by their confidence in overcoming impediments. This escalated sense of contentment subsequently yields a more potent influence on customer loyalty.

The final findings in this study emphasize the role of self-efficacy as a moderator of the relationship between e-banking service quality and customer loyalty through e-satisfaction. This result empirically strengthens the fourth and fifth hypotheses and the e-service quality model that Yi and Gong (2008) recommended. These findings emphasize that self-efficacy is a manifestation of the psychological characteristics of customers; therefore, customer self-efficacy is an important moderator for e-service quality and customer loyalty (Dabholkar & Bagozzi, 2002; Yi & Gong, 2008; Nugroho et al., 2017). In sum, the influence of electronic service quality in Islamic banks on customer loyalty operates directly and through e-satisfaction. The quality of electronic banking services influences customer satisfaction and loyalty, revealing that factors such as convenience, ease of use, accessibility, and affordability play a crucial role in enhancing customer satisfaction (Tetteh, 2022). This implies that higher service quality levels lead to increased satisfaction, resulting in enhanced customer conviction to continue using the offered services. However, there exists an impact of self-efficacy on this mediation process. Individuals with differing self-efficacy levels exhibit varying degrees of

e-satisfaction's effect on the relationship between electronic service quality and customer loyalty.

CONCLUSION

The findings of this study affirm both the direct and indirect relationships between e-banking service quality (internet banking and mobile banking) and customer loyalty. Regarding web-based services (internet banking), empirical evidence indicates that customers tend to shape their perceptions based on their interactions with the website. Conversely, for mobile-based services (mobile banking), customers often prioritize speed and efficiency, thus enhancing their daily productivity. Additional considerations, such as ease of navigation, information accessibility, transaction security, and assured customer privacy, contribute to fostering customer satisfaction. This, in turn, bears implications for repeat transactions and the propensity of customers to disseminate favorable feedback among family, friends, or acquaintances. Furthermore, the study results underscore the significance of self-efficacy for customers. This is because the psychological attributes of customers systematically impact their satisfaction levels, their proclivity to sustain product usage, and most notably, their inclination to share information with others.

Theoretical implication. This study makes several theoretical contributions to marketing literature, emphasizing insights into loyalty, e-banking service quality, and customer psychological characteristics. The study validates the utilization of WebQual™ and E-S-Qual as measurement scales for assessing e-banking service quality. Additionally, the moderating role of self-efficacy yields significant results within the research model. Lastly, the empirical affirmation and advancement of the e-service quality model by Yi and Gong (2008) through a moderated mediation approach has a notable impact on customer loyalty.

Practical implication. This study offers several managerial implications. The role of customer self-efficacy discussed in previous literature has been addressed. Therefore, any affirmation involving customer self-efficacy as a pivotal factor in marketing literature holds significant value for marketing practitioners, particularly within the realm of Islamic banking. This study provides insights for Islamic banking practitioners to manage and develop electronic platforms based on customer characteristics. In brief, these findings can be employed to categorize customers according to their unique

or special characteristics, thereby achieving satisfaction and influencing customer loyalty behaviors. This pertains to recognizing the differing priorities of customers using web-based and mobile-based services, which can guide banks in adapting their offerings. For instance, enhancing the customer experiences can be achieved by investments in optimizing website interactions for web-based services and ensuring seamless speed and efficiency for mobile-based services.

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