The effect of e-service quality on e-loyalty of Islamic banking customers: Does e-satisfaction act as mediator?

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Abstract

Purpose – This study aims to measure and analyze the mediating role of e-satisfaction on the effect of e-service quality on e-loyalty of the customers of Bank Syariah Indonesia (BSI) in Banda Aceh, Indonesia.

Methodology – This study gathered the primary data by distributing questionnaires to a number of 200 BSI customers that were selected as the respondents of the study using a purposive sampling technique. A Structural Equation Modelling (SEM) technique is used to test the four proposed hypotheses.

Findings – The study recorded that e-service quality has positively affected the e-satisfaction and e-loyalty of the BSI customers, respectively. E-satisfaction enjoyed by banking customers has enhanced their e-loyalty. In addition, the study documented that e-satisfaction has a partial mediating effect on the relationship between e-service quality and the BSI customers’ e-loyalty.

Implications – The findings of the study suggest that to promote the customers’ e-loyalty, the BSI management should focus on improving customers’ e-satisfaction by strengthening e-service quality.

Originality – This study explored the mediating role of e-satisfaction on the effect of e-service quality on e-loyalty, focusing on the users of e-banking facilities of the largest Islamic banking institution in Indonesia. Therefore, this study provides significant guidelines for the Islamic banks in maintaining and enhancing e-loyalty of customers through improving their customer satisfaction by providing a high quality of services digitally nationwide.

Cite this article:

Introduction

Mit Ghamr was known as the first Islamic banking institution in Islamic history which was established in Egypt in 1963. The establishment of Mit Ghamr was warmly welcomed by Muslim society. However, due to the political instability that occurred in Egypt at that time, the Mit Ghamr bank was undertaken by the National Bank and the Central Bank of Egypt and re-applied the principle of interest (Orhan, 2018). Although the Mit Ghamr only operated within a few years (1963-1967), but its presence has succeeded in inspiring and triggering Muslims around the globe, including Indonesia towards the viability of Islamic banking institutions to accommodate financial transactions and support economic development based on Islamic values in the modern era.
The initial idea of establishing Islamic banks in the Muslim world, including Indonesia, was based on dialogues about Islamic banks as the foundation of Islamic economics in the early 1980s. This idea was realized on a relatively limited scale as a pilot study, namely through the establishment of Bait at-Tamwil Salman of Institut Teknologi Bandung (ITB) and the Ridho Gusti Cooperative in Jakarta (Larasati and Kahfi, 2020). Through a working group formed by the Indonesian Ulema Council (Majelis Ulama Indonesia - MUI), finally, the first Islamic bank in Indonesia emerged, namely PT. Bank Mualamar Indonesia in 1992 (Sabrina & Majid, 2020; Ulina & Majid, 2020a; Ulina & Majid, 2020b). The enactment of the Law Number 21 of 2008 on Islamic Banking has helped strengthen the legal foundation and is proof of acknowledgement of the subsistence of Islamic banking in Indonesia (Majid & Zulhanizar, 2016). The progress of the Islamic banking industry in Indonesia has shown a positive trend in the last few decades due to government support in line with the aspiration towards realizing Indonesia as one of the Islamic economic and financial international hubs.

Through sharia banking data published by the Financial Services Authority (Otoritas Jasa Keuangan - OJK), until 2021 there were 14 Sharia Commercial Banks (Bank Umum Syariah - BUS), and 20 Sharia Business Units (Unit Usaha Syariah - UUS) and 163 Sharia People's Financing Banks (Bank Perkreditan Rakyat Syariah -BPRS) (OJK, 2022). This portrays that the Islamic banking industry has continued to experience impressive development in the last three decades.

Of 14 full-fledged Islamic banking institutions that existed in Indonesia in 2022, Bank Syariah Indonesia (BSI) is known as the largest Islamic banking institution in the country with accumulated total assets of IDR 277 trillion in September 2022 (BSI, 2022). BSI is the result of a merger of three sharia banks owned by the state-owned enterprises (Badan Usaha Milik Pemerintab – BUMN), namely Bank Syariah Mandiri (BSM), Bank Nasional Indonesia Syariah (BNIS), and Bank Rakyat Indonesia Syariah (BRIS) on January 27, 2021, through the official letter of OJK Number SR-3/PB.1/2021 (Rahmatullah, 2022). The launch of BSI is expected to be the face of Indonesian banking which is more innovative and modern and can be a strategic step to compete at the global level. In realizing this aspiration, as of November 1, 2021, BSI already has 1,365 branch offices and 15.5 million registered customer accounts (Walfajri, 2021). BSI is also present as a solution in one of the provinces in Indonesia, namely Aceh Province, which is currently intensively reviving the Islamic financial system. Based on Qanun Aceh Number 11 of 2018 regarding Islamic Financial Institutions (or called Qanun LKS – Lembaga Keuangan Syariah), all financial institutions (i.e., banking, non-banking, and informal financial institutions) in the province must be based operated using sharia principles starting from January 4, 2022. Together with the Aceh provincial-owned bank of Bank Aceh Syariah (BAS), BSI actively took part in the process of implementing the Qanun LKS. In the process, BSI has served 1.2 million customer accounts in the province during the initial period of implementation of the Qanun LKS (Herianto, 2021).

According to Achris Sarwani, the Former Head of Bank Indonesia (BI) of the Aceh Province Representative, the presence of BSI is also an effort to address one of the concerns of society where Islamic banks are considered not as complete and sophisticated as conventional banks (Kontenpedia, 2021). This concern arises from parties who still reject Islamic banks and prefer conventional banks on the grounds that the services at conventional banks are better (Thamrin, 2021). Therefore, the presence of BSI as one of the Islamic banks in Aceh has a responsibility to prove that Islamic banks are the best solution. This is also in line with its main goal, which is to become a modern and universal Islamic bank.

The existence of the Qanun LKS which requires existing financial institutions in Aceh Province to operate based on sharia principles would not guarantee the existing Islamic banks, including BSI not to lose their customers. Without offering a good e-services quality, the BSI’s customer become dissatisfied and disloyal to the bank and they may try to find other online banking products and services. The advance of e-marketing could be benefitted by the conventional banks from outside the province to offer their products and services through online to attract dissatisfied Islamic banking customers from the Aceh Province. Thus, taking the BSI’s customers from Aceh Province, Indonesia as the respondents of the study make this study become unique as it really
presents the online competition between Islamic banks in Aceh Province and other banking institutions from outside the province. At the same time, it evaluates the sharia consciousness of Islamic banking customer in Aceh Province and their spiritual or religious motive to become the Islamic banking customer.

Realizing this scenario, thus it is not true if the BSI should no longer focus to seek new customers, but rather to protect existing customers from being abandoned due to existing concerns. The management of BSI needs to enhance its e-services quality continuously to provide a better customers’ satisfaction and maintain their loyalty. Commercially, it makes sense to keep existing customers’ loyalty before a bank plans to acquire new customers (Srivasta & Rai, 2018). The ability of a bank to maintain customer loyalty is one of the indications of its success (Zakiy & Azzaroh, 2017).

According to Rini and Absah (2015), banking customer loyalty is a commitment and a positive attitude to continue to be a customer of a bank. However, maintaining loyal customers is certainly not an easy matter, especially in the era of globalization, which has pushed the behavior of customers who transact conventionally to digital or electronic transactions. Electronic services (e-services) in banking or e-banking are one of the important developments in today’s banking practices through the convenience it offers. In line with technological developments and existing policies, people have taken advantage of e-banking for services that are more efficient, modern, and effective. The number of users of e-banking facilities has raised from 13.6 million in 2012 to 50.4 million customers in 2016. The frequency of transactions made by customers through e-banking has also experienced an increase from 150.8 million in 2012 to 405.4 million transactions in 2016 (Putra, 2017).

The presence of the COVID-19 pandemic since the beginning of 2020 has significantly accelerated the use of electronic transactions. BSI revealed that as of January 2021, there were 3.47 million BSI Mobile users, 124.54 million transactions, and IDR150.84 trillion of transaction volume (Tempo, 2022). The rapidly growing digitalization phenomenon drives e-loyalty becoming an important aspect that need to be attentively focused on by the BSI management.

Many previous researches have studied the issue of customer loyalty and its determinants. The earliest study of loyalty found a significant association between a high level of loyalty and strong customer satisfaction as one of the advantages in competitive competition in the wireless telephone market (Mostert et al., 2016). Along with the development of research on loyalty, various variables have also been used to explain loyalty. However, satisfaction is the variable most often used and is the main determinant that influences loyalty (Rini & Absah, 2015; Wahab et al., 2015; Ansari & Riasi, 2016; Zakiy & Azzaroh, 2017; El-Adly, 2018; Ati et al., 2020). However, these studies did not focus their analyses on electronic loyalty (e-loyalty).

One of the previous studies on e-loyalty has been conducted by Lam and Burton (2006) for the case of small to medium-sized firms in Hong Kong. Meanwhile, Zehir and Narcikara (2016) researched e-loyalty in the context of e-business in Turkey. Furthermore, Rodriguez (2020) has also conducted research on e-loyalty in the clothing industry in Spain. Finally, Rasli et al. (2022) measured the dimensions of e-banking service quality on the e-loyalty of Islamic banking customers in Malaysia using multiple regression analysis. The majority of previous studies related to e-loyalty have focused their analyses on developed countries, while a similar study for the case of Indonesia has still been limited. These studies only investigated the direct effect of e-service quality on e-loyalty of the Islamic banking customers.

In the context of Indonesia, Budiman et al. (2020) investigated the effect of e-service quality on e-satisfaction and e-loyalty of the users of Mandiri online in six cities in East Java. Sasono et al. (2021) researched the effect of e-service quality on the e-satisfaction and e-loyalty of conventional private banking customers. These studies documented that both e-service quality and e-satisfaction were found to have a positive direct effect on e-loyalty. Another study by Juwaini et al. (2022) documented the effects of e-service quality and e-trust on the e-satisfaction and e-loyalty of the customer using online shop transactions in Banten, Indonesia.

The robustness of the findings of the above-reviewed studies was questionable due to a simple regression technique adopted in analyzing the investigated perceived (qualitative) variables.
The use of a Structural Equation Modeling (SEM) technique has been viewed as the most appropriate estimation that produces robust findings for studies involving perceived variables, such as e-loyalty, e-satisfaction, and service e-quality. In addition, the previous studies only explored the direct effect of e-service quality and e-satisfaction on e-loyalty and ignored the potentiality of mediating the effect of e-satisfaction on the relationship between e-service quality and e-loyalty of Islamic banking customers. Theoretically, the effect of e-service quality on loyalty might exist through the mediating variable of customer e-satisfaction. Those studies also focused their analyses on conventional banking customers and did not investigate the mediating effect of e-satisfaction on the relationship between e-service quality and e-loyalty of Islamic banking customers.

Considering the rapid development of financial technology in the era of globalization which has encouraged people to transact conventionally to digitalization, thus demanding Islamic banking institutions, including BSI, to offer their products and services using e-banking facilities to satisfy their customers and increase their loyalty, this study is indeed timely to be conducted. Additionally, intended to contribute to the present gaps in the existing studies on e-loyalty antecedents and their consequences, thus, our present study explores the mediating effect of e-satisfaction on the influence of e-service quality on e-loyalty of the customers of the largest Islamic banking institution, BSI in Indonesia using an SEM approach.

The findings of the study are hoped to shed some light on the management of Islamic banking institutions to design a proper policy to maintain customer e-loyalty on through the enhancement of customer e-satisfaction based on e-service quality improvement. The results of the study also hoped to offer policy references for the relevant banking and financial authorities to provide a favorable atmosphere for the Islamic banking industry to enhance their e-service quality and customers’ e-satisfaction and e-loyalty.

**Literature Review**

Understanding the attitudes and behaviors of customers has been an important issue for marketers to offer their products and services as expected by customers and, in turn, to attain their loyalty. Previous theories have explained critical factors determining behavior of the customers. For example, the Theory of Reasoned Action (TRA) explain the connections between belief, attitudes, intention, and behaviors within a customer’s action (Naeem et al., 2023). Meanwhile, the Theory of Planned Behavior (TPB) viewed three main components, namely, attitude, subjective norms, and perceived behavioral control that shape customers’ behavioral intentions (Hosen et al., 2023). A tenet of TPB is that behavioral intention is the most proximal determinant of human social behavior. However, attitudes and subjective norms failed to entirely explain intentions, and intentions could not fully explain behavior (Bagozzi & Yi, 1988; Bagozzi, 1992).

To better explain intentions and behavior, Bagozzi (1992) proposed self-regulating process, emotional reactions, and coping responses as the crucial determinants. Thus, appraisal, emotional response, and behavior with past and present experiences as well as future outcomes determine customer behavior. Satisfying with a particular product and services due to its good quality and services drives the customer to be loyal to the products and services offered and transacted online. The usefulness and easy use of e-marketing perceived by customers also determine their intentions to use technology (Jamshidi & Hussin, 2016). This is in line with the Technology Acceptance Model (TAM). This study, therefore, is based on the revised attitude theory of Bagozzi’s (1992) with the combination of the TAM (Hsu et al., 2012; Chang et al., 2009), namely the adoption of e-service quality, e-customer satisfaction, and e-customer loyalty.

**E-Loyalty**

Customer e-loyalty refers to the level of commitment and trust that customers have towards a company’s electronic or digital services, such as an online store, mobile app, or website. E-loyal customers are those who prefer using a company’s digital services over competitors and are more probable to repurchase and recommend the company to others (Mulia et al., 2020). Thus, customer loyalty is a condition that is desired by every company to have loyal customers who will make transactions or repurchase products or services offered in the future (Zakiy & Azzaroh, 2017).
Meanwhile, e-loyalty is a customer attitude that has positive repetition behavior to visit and make transactions on service provider websites (Rodriguez et al., 2020). These definitions show that e-loyalty is a customer’s manner or dedication to continue using electronic services for certain products and services which results in positive repetition behavior. Thus, the e-loyalty of Islamic banking consumers shows the attitude and commitment of their customers to continue using Islamic banking services electronically repeatedly.

Companies can measure e-loyalty by conducting surveys or using digital analytics tools to track customer engagement and behavior on their website or app. The collected data can be used to identify areas for improvement and to make changes to the digital service that will increase e-loyalty. Generally, e-loyalty could be viewed from four levels, namely cognitive, affective, conative, and action (Hur et al., 2011). If these four levels of loyalty measurement are applied to customer behavior in using e-banking, it then can be measured by the following indicators:

a) Cognitive, namely customer preference for choosing a particular bank's electronic services compared to competing banks,
b) Affective, namely the preference or attitude of customers towards certain banks based on cumulatively e-satisfying use of electronic services,
c) Conative, namely the keenness of customers to continue to utilize electronic services even though they do not have to make a purchase, and
d) Action, namely the customer is willing to return to using the selected banking electronic services and make purchases of available products or services.

**Determinants of E-Loyalty**

E-loyalty can be influenced by many factors, including the quality and reliability of the digital service, the ease of use of the website or app, the availability of helpful information and resources, the effectiveness of customer service, and the level of trust and confidence, and satisfaction customers have in the company. Even though there is no specific theoretical framework for identifying the determinants of customer loyalty, many researchers unanimously agree that customer satisfaction is the main factor influencing customer loyalty (El-Adly, 2018). Lam and Burton (2006) also emphasized that customer satisfaction has often been used as the main determinant of customer loyalty. In addition, satisfaction is also often considered to be a mediating variable in the service quality–customer loyalty relationship. Many studies have shown a positive effect of service quality on customer loyalty which is mediated by customer satisfaction (Harianto & Subagio, 2013; Zakiy & Azzaroh, 2017). Therefore, customer satisfaction will be a factor that influences customer loyalty as well as a variable that mediates the effect of service quality on customer loyalty.

**E-Satisfaction**

Customer e-satisfaction refers to the level of satisfaction customer experiences when using a company’s electronic or digital services, such as an online store, mobile app, or website. E-satisfaction is an important metric for companies because it can have a significant impact on customer loyalty and retention (Fatikah & Albanna, 2022). Satisfied customers are more prone to revisit a company's website or app, make repeat purchases, and commend the company to others. In contrast, dissatisfied customers are more possible to switch their business to other companies (Asfour & Haddad, 2014). Thus, customer e-satisfaction is a post-consumption evaluation where if the performance of a product or services transacted electronically is below expectations, then the customer feels dissatisfied. Conversely, if the performance of a product equals or exceeds customer expectations, then the customer feels satisfied (Khan et al., 2019). In short, customer e-satisfaction is defined as a feeling that arises from the customer’s assessment in determining whether the output of the consumption of the product or services obtained electronically meets customer expectations or not.

E-satisfaction is an appraisal of how well a company's digital services assure the needs and expectations of its customers. Companies can measure e-satisfaction by conducting surveys or using digital analytics tools to track customer engagement and behavior on their website or app.
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The collected data can be used to identify areas for improvement and to make changes to the digital service that will increase customer satisfaction. According to Li et al. (2012), customer e-satisfaction can be measured through the following indicators:

a) Usefulness, namely the extent to which electronic services provided can provide benefits to a person’s daily life including benefits to work and compatibility with one’s lifestyle.

b) Enjoyment, namely how much pleasure a person can feel from electronic services provided through the convenience and comfort when using them.

c) Past Experience, namely the perception that is formed from experience using the electronic service that is being used and experience using other services.

d) The decision, namely the customer’s decision to determine whether the customer will use or not use the bank’s electronic services and the decision to switch services.

Factors that can affect e-satisfaction include the easiness of use of the website or app, the speed and reliability of the service, the availability of helpful information and resources, and the effectiveness of customer service. For example, Ati et al. (2020) explain that customer e-satisfaction comes from the products or services available where customers feel happy if the products or services provided electronically are good and vice versa. Many previous studies have found the importance of service quality in influencing customer satisfaction (Zhao et al., 2012). Service quality is closely related to customer satisfaction because it reveals the customer’s evaluation of the service provider’s performance. Ozer et al. (2013) explained that when evaluating the performance of their electronic service providers, customers focus on the satisfaction they get from their services. Therefore, e-service quality is one of the determinants influencing customer e-satisfaction.

**E-Service Quality**

Electronic service quality or e-service quality is the customer’s overall appraisal and assessment of the quality of services provided electronically (Amin, 2016). Pasuraman et al. (2005) describe e-service quality as website performance in facilitating shopping, purchasing, and shipping efficiently and effectively. Therefore, it can be concluded that e-service quality is how far customer expectations are with the performance of the quality of electronic services received by customers in facilitating the need to make transactions.

Several scales of e-service quality have been developed in the previous study. For example, Zavareh et al. (2012) used the E-SERVQUAL scale to explain the significant relationship between e-service quality and customer e-satisfaction in e-banking services in Malaysia. Meanwhile, Zehir and Narcikara (2016) used the E-S-QUAL scale to quantify the e-service quality of the customers of online businesses in Turkey. Many dimensions used in various existing e-service quality measurement scales require specific measurement dimensions to explain how customers evaluate e-service quality. According to an extensive literature review conducted by Ladhari (2010), e-service quality can be measured specifically through six dimensions, namely (i) reliability/fulfilment or promised service performance, (ii) responsiveness or willingness to help customers, (iii) ease of use, (iv) privacy/security or customer personal information, (v) web design or aesthetic features and content, and (vi) information quality/benefit or information accuracy.

**A Review of Selected Previous Studies: Hypothesis Development**

**Influence of E-Service Quality on E-Satisfaction**

Service quality is defined as the difference between expectations and performance received by customers (Rasli et al., 2022). The higher the customer’s expectations are fulfilled, the more satisfied the customer is with the quality of service they receive. Zavareh et al. (2012) documented a significant positive relationship between e-service quality and customer satisfaction. Many other previous studies also recorded a significant positive effect of service quality on customer satisfaction (Cahyani, 2016; Othman & Owen, 2001; Fianto et al., 2021). On this basis, the study proposes the first hypothesis as follows:

\[ H_1: \text{E-service quality influences customer satisfaction.} \]
Influence of E-Service Quality on E-Loyalty

Many previous studies show that the higher level of e-service quality perceived by customers, the higher will be the level of customer loyalty. For example, Budiman et al. (2020) found a significant positive influence of e-service quality on customer loyalty. Similarly, Rasli et al. (2022) documented a positive influence of e-service quality on e-loyalty. Meanwhile, Amin (2016) showed that e-service quality has a significant direct effect on e-customer loyalty. Based on these studies, the second hypothesis is proposed as follows:

\( H_2: \) E-service quality influences e-loyalty.

Influence of E-Satisfaction on E-Loyalty

If the performance of Islamic banks equals or surpasses customer expectations, then the customer will be satisfied. Satisfied customers will repetitively use the same products or services in the future, thereby creating loyal customers (Zakiy & Azzaroh, 2017). Customer satisfaction has been shown to have a positive effect on loyalty (Haq & Awan, 2020). Customer satisfaction also has a significant influence on customer loyalty (Rini & Absah, 2015; Wahab et al., 2015; Ansari & Riasi, 2016). On this basis, the study proposes the third hypothesis as follows:

\( H_3: \) E-satisfaction affects customer e-loyalty.

Effect of E-Service Quality on E-Loyalty: E-Satisfaction as a Mediator

Providing products and services that satisfy customers is one of the ways to ensure customer loyalty to a company. Customers feel satisfied if the company provides good e-service quality. Ariff et al. (2013) showed that e-satisfaction has a partial mediating effect on the relationship between e-service quality and e-loyalty. Hur et al. (2011) found that satisfaction is an important mediator in explaining the effect of sports site quality on e-loyalty. Finally, Ati et al. (2020) documented that customer satisfaction has a significant role in mediating the service quality-customer loyalty relationship. On this ground, the study proposes the fourth hypothesis as follows:

\( H_4: \) E-satisfaction mediates the influence of e-service quality on customer e-loyalty.

In short, the overall hypotheses examined in the study are illustrated in the following research proposed model.

**Figure 1. A Proposed Research Model**

Research Methods

This study measures and analyzes the mediating effect of e-satisfaction on the relationship between e-service quality and e-loyalty of Bank Syariah Indonesia (BSI) customers in Banda Aceh, Indonesia. The size of the sample of the study was determined by considering the number of indicators involved in measuring the three variables studied in this study. Hair et al. (2017) explained that research using SEM analysis requires at least a minimum sample size of five times larger than the number of indicators. A total of 14 indicators were used in this study, six indicators respectively to measure e-service quality (exogenous variable), four indicators to measure e-satisfaction (mediating variable), and four indicators to measure e-loyalty (endogenous variable). The minimum required in this study is 70 BSI customers. Meanwhile, using the Slovin formula with a 10% precision level, the number of samples was about 100. However, this research selects
200 BSI customers to represent the entire population and consequently produce robust estimation results.

Of the 60,389 customers of the BSI in the city of Banda Aceh on September 2022 (BSI, 2021), 200 of them were selected as the sample of the study using a purposive sampling technique. Only customers, who are domiciled in Banda Aceh City, have a BSI account, and have used the electronic transaction facilities of the bank at least three times are considered to meet the criteria as the research sample. They are considered to have the right perception and assessment of the e-service quality offered by the BSI, as a determinant of e-satisfaction and e-loyalty studied in this study.

The data were obtained by distributing questionnaires to the selected respondents and measured using a five-point type of Likert scale. The variables studied included e-service quality (exogenous variable) measured by six indicators (i.e. reliability, responsiveness, ease of use, security, aesthetic features, and information quality) following Ladhari (2010), e-satisfaction (mediation variable) measured by four indicators (i.e., usefulness, enjoyment, past experience, and decision) following Li et al. (2012), and e-loyalty (endogenous variable) is measured by four indicators (i.e., cognitive, affective, conative, and action) following (Hur et al., 2011).

As previously mentioned, to measure and analyze the indirect effect of e-satisfaction e-service quality on e-loyalty through e-satisfaction, this study uses the Structural Equation Modeling (SEM) analysis technique. The advantages of SEM compared to other analytical techniques are the high accuracy and robustness of the results of data analysis and indicators obtained and its ability to confirm theoretical values (Hair et al., 2017). Referring to a proposed research model as illustrated in Figure 1, the study estimates the following SEM equations:

\[ SAS = \gamma_{11} ESQ + \varepsilon_1 \]  
\[ ELY = \gamma_{21} ESQ + \gamma_{22} ESAS + \varepsilon_2 \]

where \( ESAS \) is the customer e-satisfaction, \( ESQ \) is the e-service quality, \( ELY \) is the customer e-loyalty, \( \gamma \) is the estimated regressors, and \( \varepsilon \) is the structural error terms.

To test the direct influence of e-service quality on e-satisfaction (Hypothesis 1), the direct influence of e-service quality on e-loyalty (Hypothesis 2), and the direct influence of e-satisfaction on e-loyalty (Hypothesis 3), the t-test is utilized. Meanwhile, to examine the indirect effect of e-service quality on e-loyalty through e-satisfaction (Hypothesis 4), the Sobel t-test within the framework of Baron and Kenny (1986) is adopted. However, before testing the hypothesis, this study first conducted a series of tests on the instrument, classical assumptions, and the goodness of fit index to ensure the suitability of the research model.

**Results and Discussion**

**Characteristics of Respondents**

Table 1 reports the characteristics of the BSI’s customers in Banda Aceh, Indonesia. As illustrated in Table 2, of 100 selected BSI customers investigated in our study in the City of Banda Aceh were dominated by males (60%), while the rest 40% were female. The majority of them were between 20-30 years old (33%), followed by those with ages less than 20 years old (13%), between 31-40 years old (27%), between 41 – 50 years old (22%), and above 50 years old (5%).

In terms of education level, they are dominated by respondents who graduated Bachelor’s degree (39%), followed by Senior High School graduates (22%), Master’s degree graduates (13%), Diploma graduates (10%), Junior High School graduates (7%), PhD holders (7%), and Elementary School graduates (2%). Furthermore, in view of the profession, the majority of them were students (45%), followed by civil servants (30%), private employees (10%), entrepreneurs (8%), other types of the profession (5%), and housewife (2%).

In terms of monthly income, the majority of respondents obtained a monthly income between IDR2-4 million (29%), followed by a monthly income between IDR4-6 million (28%), less than IDR2 million (22%), between IDR6-8 million (10%), between IDR8-10 million (8%), and above IDR10 million (3%). Finally, in view of the use of e-banking service facilities, the majority
of the respondents have used mobile banking (40.68%), followed by ATM facilities (36.16%), internet banking (9.60%), SMS banking (8.47%), and EDC facilities (5.08%).

Table 1. Characteristics of Respondents

<table>
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<th>Frequency</th>
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<td>Private employee</td>
<td>20</td>
<td>10.0</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>16</td>
<td>8.0</td>
</tr>
<tr>
<td>Housewife</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>Others</td>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Monthly income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; IDR2 millions</td>
<td>44</td>
<td>22.0</td>
</tr>
<tr>
<td>IDR2 – 4 million</td>
<td>58</td>
<td>29.0</td>
</tr>
<tr>
<td>IDR4 – 6 million</td>
<td>56</td>
<td>28.0</td>
</tr>
<tr>
<td>IDR6 – 8 million</td>
<td>20</td>
<td>10.0</td>
</tr>
<tr>
<td>IDR8 – 10 million</td>
<td>16</td>
<td>8.0</td>
</tr>
<tr>
<td>&gt; IDR10 millions</td>
<td>6</td>
<td>3.0</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>E-banking facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automated Teller Machine (ATM)</td>
<td>128</td>
<td>36.16</td>
</tr>
<tr>
<td>Electronic Data Capture (EDC)</td>
<td>18</td>
<td>5.08</td>
</tr>
<tr>
<td>SMS Banking</td>
<td>30</td>
<td>8.47</td>
</tr>
<tr>
<td>Mobile Banking</td>
<td>144</td>
<td>40.68</td>
</tr>
<tr>
<td>Internet Banking</td>
<td>34</td>
<td>9.60</td>
</tr>
<tr>
<td>Total</td>
<td>354</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Primary data processed (2022) using the AMOS-SEM software.

Since Banda Aceh is known as the education city in Aceh Province, thus the respondents of the study were dominated by university students with ages between 20-30 years old and enjoyed a monthly income of less than IDR6 million. The selected respondents are very well in the mastery of financial technology and digital transaction, thus they are suitable to the researched topic of e-service quality, e-satisfaction, and e-loyalty.

Testing Model Measurement

Before testing the hypotheses, this study first conducted instrument tests (validity and reliability tests) and the suitability of the estimation model (goodness of fit index). The findings of the validity test demonstrated that all indicators used to measure the variables studied in this research were valid. This is because the estimated correlation coefficients for each item were found to be above
the critical value of the product-moment correlation of 0.1966. Furthermore, the reliability test found an alpha value for the variables of e-service quality of 0.810, e-satisfaction of 0.867, and e-loyalty of 0.878. These findings showed that all investigated variables were considered reliable as their Cronbach Alpha values were larger than 0.60.

In the next step, the study performed a Confirmatory Factor Analysis (CFA) to measure the indicators that make up the latent variables of the research model. The estimation results show that several indicators do not meet the requirements because the loading factor value is below 0.5. Hair et al. (2017) stated that an outer loading value that has value below 0.5 indicates that the indicator is categorized as very weak, so it must be removed from the model. Therefore, this study has eliminated six indicators whose loading factor values are below 0.50. The estimation results after eliminating indicators that do not meet these criteria show that all indicators now meet the requirements.

Table 2. Estimation of the Goodness of Fit Indices (GoFI)

<table>
<thead>
<tr>
<th>GoFI</th>
<th>Cut-off Value</th>
<th>Before Modification</th>
<th>After Modification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>&lt; 487.882</td>
<td>789.608</td>
<td>Poor Marginal</td>
</tr>
<tr>
<td>RMSEA</td>
<td>≤ 0.08</td>
<td>0.139</td>
<td>Poor Marginal</td>
</tr>
<tr>
<td>GFI</td>
<td>≥ 0.90</td>
<td>0.625</td>
<td>Poor Marginal</td>
</tr>
<tr>
<td>AGFI</td>
<td>≥ 0.90</td>
<td>0.552</td>
<td>Poor Marginal</td>
</tr>
<tr>
<td>CMIN/DF</td>
<td>≤ 2.00</td>
<td>2.903</td>
<td>Poor Marginal</td>
</tr>
<tr>
<td>TLI</td>
<td>≥ 0.90</td>
<td>0.641</td>
<td>Poor Marginal</td>
</tr>
<tr>
<td>CFI</td>
<td>≥ 0.90</td>
<td>0.675</td>
<td>Poor Marginal</td>
</tr>
</tbody>
</table>

Source: Primary data processed (2022) using the AMOS-SEM software.

In the next step, an evaluation of the criteria for the Goodness of Fit index is carried out to determine the appropriateness of the proposed research model. As reported in Table 2 for the model before modification, all indices showed poor marginal. Thus, a re-specification measurement model is performed using Modification Indices (MI). The findings from the re-specification measurement model (after modification) showed that all indices have met the fit indices criteria for a good measurement model. Thus, our estimated model after re-specification could provide robust findings, representing the relationship between indicators and their respective constructs as well as their interactions between variables.

The Direct Effect of E-Service Quality on E-Satisfaction and E-Loyalty

Having ensured that our estimated model meets the goodness of fit criteria, the study, in turn, estimates the direct effects of e-service quality on e-satisfaction, e-service quality on e-loyalty, and e-satisfaction on e-loyalty using the SEM analysis, thus testing the Hypotheses 1, 2, and 3. The results of the estimated model are presented in Table 3.

Table 3. The Direct Effects of E-Service Quality on E-Satisfaction and E-Loyalty

<table>
<thead>
<tr>
<th>Interactions between Variables</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Satisfaction ← E-Service Quality</td>
<td>0.771***</td>
<td>0.100</td>
<td>0.000</td>
</tr>
<tr>
<td>E-Satisfaction ← E-Service Quality</td>
<td>0.681***</td>
<td>0.284</td>
<td>0.000</td>
</tr>
<tr>
<td>E-Loyalty ← E-Satisfaction</td>
<td>0.259**</td>
<td>0.107</td>
<td>0.034</td>
</tr>
</tbody>
</table>

Source: Primary data processed (2022) using the AMOS-SEM software.
Note: *** and ** show significance at the 1% and 5% levels.

The Effect of E-Service Quality on E-Satisfaction

As observed from Table 3, the e-service quality is found to positively and significantly influence the e-satisfaction of the BSI's customers in the City of Banda Aceh, Indonesia at 1% with an estimated coefficient of 0.771. This finding portrays that an increase in e-service quality by a unit has increased the e-satisfaction of Islamic banking customers by 0.771 on the Likert scale.
The results of the study indicate that increased customer e-satisfaction can be realized by providing quality services, such as electronic services provided by BSI to its customers. This is as stated by Ati et al. (2020) and Fianto et al. (2021) that customer e-satisfaction comes from the services provided by banks where customers will feel happy if the services provided are of high quality, and vice versa. Therefore, in achieving this, it can be done by increasing e-service quality. The ease of using electronic services provided by the BSI has facilitated the transaction settlement process, thus making the appearance of bank electronic services more visually attractive.

Next, the Islamic banking institutions should ensure their operation adheres to sharia principles of fairness and social justice to build trust and loyalty among customers and increase their e-satisfaction. The banks need to offer a wide range of e-services such as online account opening, e-transfer, mobile banking, and online account management to meet the diverse needs of customers (Fatikah & Albanna, 2022). The banks should provide digital tools such as mobile banking and online account management to make banking more convenient for customers. In addition, the banks should provide clear and comprehensive information about their e-services on their website, covering the Frequently Asked Questions (FAQs) and step-by-step instructions (Mulia et al., 2020). Providing online resources such as tutorials, videos, and webinars to educate customers about the principles of Islamic banking and how to use online banking services could also increase customer e-satisfaction (Asfour & Haddad, 2014).

Furthermore, Islamic banks can use digital platforms such as social media to build a community of customers and engage them in discussions related to Islamic finance and banking. The banks can use digital tools such as online surveys and social media to gather feedback from customers and use it to improve their e-services (Sasono et al., 2021). The banks should ensure that customers can easily reach their customer service representatives through various channels, and that their queries are resolved promptly and efficiently. Finally, the banks need to ensure that the e-service platform is compliant with the Indonesian central bank’s (Bank Indonesia) regulations and standards. Finally, the banks should continuously monitor and evaluate the e-service quality, and make necessary improvements based on customer feedback (Butt & Aftab, 2013).

The results of the study are in harmony with the results of Zavareh et al. (2012) and Zhao et al. (2012) who found that e-service quality has a positive effect on customer e-satisfaction. The results of this study are also in line with several other previous studies where service quality has positively contributed towards enhancing customer satisfaction (Othman & Owen, 2001; Cahyani, 2016; Fianto et al., 2021).

**The Effect of E-Service Quality on E-Loyalty**

Furthermore, as reported in Table 3, the study documented a positive effect of e-service quality on e-loyalty at the 1% significance level with an estimated value of 0.681. This shows that an improved in e-service quality by 1 unit on the Likert scale has caused e-loyalty to increase by 0.681 units on the Likert scale.

The finding shows that increasing e-loyalty can be easily realized if the banking customers provided e-service with high quality, thereby the customers intend to re-transact products or services digitally offered by the bank. The higher e-service quality perceived by customers enhances higher loyalty (Budiman et al. 2020). Therefore, to maintain customers’ e-loyalty, the bank should improve its e-service quality. Easy use of e-services encourages customers to be loyal to banking products or services. The results of the study are in harmony with the previous studies conducted by Amin (2016), Sasono et al. (2021), Juwaini et al. (2021), and Rasli et al. (2022) who found that good e-service quality attracted customer e-loyalty.

Furthermore, Islamic banks need to implement a comprehensive customer feedback system to gather and address customer complaints and concerns promptly. The banks should allocate sufficient budget to invest in technology and infrastructure to ensure high levels of security and reliability for online transactions. The banks must offer a broad array of e-services that are tailored to the specific needs of Islamic banking customers and provide clear and concise information about e-services and their features to help customers make informed decisions (Mulia et al., 2020).
In addition, the banks must develop a strong brand image and reputation through effective marketing and communication strategies and continuously improve e-services based on customer feedback and changing market trends (Sasono et al., 2021). Creating a sense of trust and personalization by using Islamic banking principles, such as shared values, ethics and social responsibility, providing good customer service with a professional and friendly attitude, and training their employees on how to handle customer complaints and inquiries in a way that is consistent with Islamic banking principles would improve their customers’ e-loyalty (Butt & Aftab, 2013).

**The Effect of E-Satisfaction on E-Loyalty**

Table 3 also shows that customer e-satisfaction positively influenced e-loyalty at the 1% level of significance with an estimated value of 0.259. This shows that an increase in e-satisfaction by 1 unit has enhanced e-loyalty by 0.259 units on the Likert scale. This finding suggests that enhancing the banking customer e-loyalty could be realized starting by encouraging customers to want to always use BSI electronic services when making transactions related to banking products or services. Satisfied customers will repetitively repurchase the same services in the future, thereby creating loyal customers (Zakiy & Azzaroh, 2017). The Islamic banks need to regularly measure and monitor e-satisfaction levels through customer surveys and feedback mechanisms by addressing any issues or problems that customers may have with e-services in a timely and efficient manner and continuously improving e-services based on customer feedback and changing market trends would improve customer e-loyalty (Butt & Aftab, 2013).

Furthermore, investing in technology and infrastructure to ensure high levels of security and reliability for online transactions, developing a strong brand image and reputation through effective marketing and communication strategies, and creating a sense of trust and personalization by using Islamic banking principles, such as shared values, ethics and social responsibility would enhance customer e-loyalty (Fatikah & Albanna, 2022). The banks should also provide clear and concise information about e-services and their features to help customers make informed decisions. Providing good customer service with a professional and friendly attitude, providing rewarding customers for their loyalty by offering special promotions and discounts for repeat customers, and conducting training to employees on how to handle customer inquiries and complaints in a way that is consistent with Islamic banking principles would enhance Islamic banking customers’ e-loyalty (Butt & Aftab, 2013; Asfour & Haddad, 2014).

Thus, an increase in e-satisfaction by making customers feel satisfied with the banking electronic services as a whole would enhance customers’ e-loyalty. Our empirical findings confirm the precious research conducted by Haq and Awan (2020), which has proven the existence of a positive association between e-satisfaction and banking customer e-loyalty.

**The Effect of E-Service Quality on E-Loyalty: E-Satisfaction as a Mediator**

![Diagram](source: Primary data processed (2022) using the Sobel test calculator.)

**Figure 2. Testing Mediating Effect of E-Satisfaction**
Figure 2 illustrates the finding of a Sobel t-test to measure the mediating effect of e-satisfaction on the e-service quality and e-loyalty relationships of the BSI customers. As illustrated in Figure 2, the study found that the effect of e-service quality on e-loyalty is mediated by e-satisfaction with an estimated coefficient of 0.199 at the 5% significance level. Thus, e-satisfaction acts as a variable that mediates the effect of e-service quality on e-loyalty. Since the study found the significant direct influence of e-service quality on e-loyalty and the significant indirect influence of e-service quality on e-loyalty through e-satisfaction, thus e-satisfaction acts as the partial mediator.

Differently put, our finding of a significant partial mediator means that the e-service quality and e-loyalty relationship is not fully mediated by e-satisfaction due to the finding of a significant direct influence of e-service quality on e-loyalty. Both the direct effect of e-service quality on e-loyalty and the indirect influence of e-service quality on e-loyalty through e-satisfaction were documented. These findings show that any effort to maintain and enhance the banking customer e-loyalty would be effective by providing high-quality e-services and improving customers’ e-satisfaction. The banking management could also focus on providing customers with high e-satisfaction on the basis of offering high-quality e-services.

Our findings are in line with empirical evidences from previous studies (Hur et al., 2011; Ariff et al., 2013). For example, Ariff et al. (2013) suggested that to create loyal customers, banks must make customers feel satisfied with the services offered where this can be achieved through good e-service quality. Thus, to enhance the e-loyalty of its customers, the Islamic bank should provide good e-service quality so that customer e-satisfaction can be provided. In their study, Hur et al. (2011) also put emphasize the importance of ensuring customers’ e-satisfaction to maintain and enhance their e-loyalty by offering them better quality e-services.

The e-loyalty of the BSI customers in Banda Aceh was categorized as high. This is evidenced by the unwillingness of the banking customers to switch to other services, customers always intend to use the offered electronic services, and they also prefer to use the BSI’s electronic services over other banking services. The electronic features should be further improved to encourage customers to continuously use the banking services electronically. Although the banking customers showed their satisfaction with the e-services of the bank, due to high competitive banking industry, the BSI needs an endless effort to provide overall customers’ e-satisfaction by meeting their needs and ensuring an enjoyable experience using the e-banking facilities and interacting with the banking employees.

Continuous attention should also be paid to the banking management to improve its e-service quality. The bank should provide services following what was previously promised. The appearance and structure of banking websites and e-banking visual features should be attractively displayed, friendly used, effortlessly accessed, and easily completed transactions. The e-banking system should ensure and guarantee the protection and security of customers’ personal information.

**Conclusion**

This study attempted to examine and analyze the effect of e-service quality on e-loyalty through the mediation of e-satisfaction, taking the case of the customers of Bank Syariah Indonesia (BSI) in Banda Aceh, Indonesia. Adopting a Structural Equation Modeling (SEM) analysis technique, the study provided evidence of a positive direct effect of e-service quality on e-satisfaction and e-loyalty of the banking customers, respectively. Additionally, e-satisfaction is recorded to have a partial mediating effect on the relationship between e-service quality and e-loyalty.

Our findings further imply that to enhance banking customers’ e-loyalty, it is essential to amplify customer e-satisfaction from using banking electronic services as a whole. Islamic banks could easily provide customers with higher e-satisfaction and attain higher e-loyalty by continuously meeting their needs while using banking electronic services. Islamic banking management must pay attention to the ease of using banking electronic services, and the convenience of the transaction settlement process through banking electronic facilities.
Considering a highly competitive banking industry, Islamic banking institutions need an endless effort to provide overall customers’ e-satisfaction by meeting their needs and ensuring its customers an enjoyable experience while using the e-banking facilities and interacting with the banking employees. Continuous attention should also be paid to the banking management to fulfil its promise by providing e-service quality as promised. The visual appearance and structure of banking electronic transaction platforms should be attractively displayed, friendly used, effortlessly accessed, and fast transaction completion. Finally, the bank should also ensure and guarantee the protection and security of customer’s personal information when using online transactions.

To provide more robust empirical findings related to the investigated research topic, future studies could incorporate a bigger sample size by researching not only the BSI in Banda Aceh, Indonesia, but also including other BSI offices across provinces in Indonesia as well as other Islamic banking institution nationwide in their studies. Other variables that might influence the e-satisfaction and e-loyalty of Islamic banking customers could be incorporated into the research model, such as financial literacy, spiritual benefits, banking reputation, and so on. These variables might be treated either as mediating or moderating variables in future studies to enhance and enrich the recent empirical findings on the topic.

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Project administration: M. Rafi Rezeki
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Validation: M. Rafi Rezeki, M. Shabri Abd. Majid
Visualization: M. Rafi Rezeki
Writing – original draft: M. Rafi Rezeki
Writing – review & editing: M. Shabri Abd. Majid, Salina H. Kassim

References


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