The Measurement Analysis of Online Service Quality Toward State Banking Customers Using Structural Equation Modeling

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Abstract

The purpose of this study is to evaluate the level of customer care offered online so that users can keep using the e-banking system as they see fit. In order to gather data for e-banking system study, involved parties' questionnaire responses, interviews, and observations are used. Furthermore, it is necessary to perform a literature evaluation pertaining to this topic. Researchers both directly and indirectly distributed questionnaires as part of the data collection process. In the first stage, non-probability sampling is performed, and in the subsequent stage, purposive sampling is used based on predetermined criteria. 100 people made up the sample in this study. The Structural Equation Modeling (SEM) method was the data analysis technique used in this study. The study's findings demonstrated that users of the e-banking system were more likely to trust the caliber of the services offered. Customers can feel satisfied and assured when using the e-banking system because it provides what they need. Because the e-banking system's quality service has a relatively high value in relation to the probability value of its variable values, clients can feel confidence when transacting with it. The e-banking system is able to make clients feel content, hence it has a major influence on customer loyalty, even though the value is fairly tiny compared to the likelihood values for other variables.

Keywords: Service Quality, Banking System, Customer Satisfaction, Customer Trust, Customer Loyalty.

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1. Introduction

Due to the fierce rivalry created by Indonesia's banking industry's explosive growth, banks must become more inventive, particularly when it comes to the creation of customer-facing goods and services [1]. Banks need to be creative when introducing new products or services to guarantee customer acceptance [2]. The bank's success in facing this competition comes from trying to improve various facilities and activities related to product marketing to attract customers' interest in using the banking services offered [3]. One way to satisfy consumers is to provide good service. A form of good relationship with the community is an attitude of customer loyalty towards the bank. The new generation, which heavily relies on digital roles, will leave behind banks that do not innovate in technology [4]. The use of technology in the banking sector is very important for accelerating financial inclusion. The digital era has brought major changes in the behavior of bank customers [5]. Apart from that, the limited time that customers have to come directly to the bank and wait for transactions is an obstacle and a challenge that the banking industry must face [6].

The combination of technology with traditional banking services through e-banking is one thing that provides many benefits for customers [7]. E-banking facilities enhance the effectiveness and efficiency of transactions, enabling customers to carry out self-service transactions [8]. Through electronic media such as automated teller machines (ATMs), electronic data capture (EDC), point of sale (POS), internet banking, SMS banking, mobile banking, e-commerce, phone banking, and video banking, bank customers can access information, communicate, and conduct financial transactions [9][10]. This service is known as e-banking. These days, the internet has permeated many facets of life, as seen by the rise of new technologies that have had a profound impact on people's lives as well as online entertainment, shopping, and banking [11]. In 2020, 40% of banking transactions were made by ATMs, a little decrease from 41% in 2019 [12]. However, when compared with 2015, when 60% of the frequency of banking transactions were transactions using ATMs, this figure shows a decrease of 20%. The frequency of transactions through bank branches in 2022 was only 5% [13].

Customers will abandon banks that are less responsive to changes in competition and customer desires. Customer loyalty to a banking institution's services is influenced by its ability to sustain customer happiness. A key factor in fostering online client e-loyalty is e-satisfaction and e-service quality [14]. Consumers' preferences,
aspirations, and future intentions include things like their wish to stick with a company for their long-term purchases and their recommendation of the product to friends and colleagues [15]. Customer trust has an impact on customer loyalty as well, therefore a high level of loyalty can be attained based on the level of trust earned through excellent service. High levels of trust are also influenced by a company's reputation, which is attained by providing dependable goods and services that are valuable to both the bank and its clients on an emotional level [16]. Enhancing technology services is one method to boost client confidence in financial services [17]. Companies are adopting customer-focused strategies as a result of the changing business landscape and growing consumer power. This includes leveraging new technologies to foster customer interactions [18]. For this reason, it is vital to carry out research to find out whether the e-banking system deployed is able to match the standards demanded by consumers both in terms of speed, accuracy, and comfort, apart from the convenience element [19]. In Indonesia, 80% of consumer survey participants have utilized mobile banking services, a type of online banking. By 2018, that number had risen to 60% [20]. Customers typically use mobile banking to send money to other people and check their accounts [21]. To satisfy customers, you have to deliver excellent service. When users are happy with a website, they are more likely to become devoted users and engage with it more in the future [22]. Bank Mandiri was chosen because it has the latest functions and appearance in its system, namely Mandiri Online, which can be accessed on a web browser or on a smartphone, which is a previous integration service from Mandiri Internet and Mandiri Mobile to provide greater comfort and convenience in obtaining information and carrying out financial transaction activities for customers [23]. The services provided by the bank were only released in 2020 to make it easier for customers to make transactions without having to visit an ATM, customer service, or teller. Throughout 2020, customers carried out a total of more than 4 thousand transactions per minute, with 700 transactions per minute via mobile and internet banking, 3,000 transactions per minute at ATM machines, and 750 transactions per minute through conventional transaction processes at branch offices [24]. If we look at the number of transactions per minute throughout 2021, there were 6,500 transactions, including transactions via mobile and internet banking, predominantly 2,600 transactions per minute, and the number of transactions per minute via ATM was 2,700 transactions [25]. Meanwhile, transactions via branch offices are only 340 transactions per minute. Researchers found a significant increase in transactions using internet banking and mobile banking from the previous year, with the number rising from 700 transactions per minute to 2,600 transactions per minute [26]. However, based on researchers’ observations, there were still queues and many customers who wanted to carry out banking transactions directly at branch offices [27]. Apart from that, e-banking users with smartphones on Android devices can be seen on the Google Play Store, which has a rating of 4 from 200 thousand reviews made by customers and a rating of 4 from 300 reviews made by customers [28]. If we look at e-banking users with smartphones, we can see from Android and iOS users that satisfaction with the quality of service for customers using the e-banking system is followed by the high number of complaints felt by customers using the e-banking system, which occur due to obstacles such as the difficulty of registering and verifying [29][30]. The difficulty of registering and verifying the mobile phone number when you first register when you first register, it is difficult to log in to the e-banking system, and several transactions carried out are not recorded while the balance has decreased [31][32]. For this reason, it is necessary to pay attention to the quality of existing services, because the level of success in using e-banking services depends on how customers accept the system [33]. The quality of service at a bank is the main key to winning competition with other banks so that customers are interested in continuing to use e-banking services [34]. Therefore, it is important for banks to know how customers appreciate e-banking services to help find strategic plans to increase market share in the future [35]. Factors that influence customer service include service quality, customer satisfaction, customer trust, and loyalty factors [36]. SEM (Structure Equation Model) is expected to improve the quality of service at Mandiri Online at Bank Mandiri through these factors [37]. Previous researchers used the Smart-PLS application as a tool for measurement, but this time the author used the AMOS application as a tool for measuring. Before use, it is crucial to determine the software choice accurately. This is important because every SEM software has requirements that must be in accordance with the SEM model.

2. Research Methods

Researchers use design or stages in research to measure the quality of their study. The methods used in the research include the data collection method using the e-servequal method as a questionnaire with questions related to e-banking services, and the analysis method in the research uses the SEM (Structural Equation Modeling) method. The researchers collect data for e-banking system research from questionnaires, interviews, and observations with related parties. Furthermore, it is necessary to conduct a literature review related to this research. In the data collection process, researchers distributed questionnaires directly and indirectly. Researchers carried out direct distribution through direct face-to-face meetings to find the right respondents. Researchers distributed questionnaires indirectly through social media platforms (email, WhatsApp, Line) using the Google Forms feature for data collection. Researchers will filter and classify all collected questionnaires
using the MS number processing software Excel. The sampling methods used are non-probability sampling as the first stage and purposive sampling for the next step based on certain criteria. 100 people made up the study's sample. The structural equation model, or SEM, approach of data analysis was employed in this investigation. It is a multivariate statistical methodology that combines regression and factor analysis.

3. Results and Discussion

The data analysis shows a quite interesting picture regarding the use of e-banking by respondents in this study. In terms of gender distribution, it appears that there is no significant dominance between men and women, with men (40%) and women (60%) of the total respondents. However, the main focus appears to be on the 21–30 age group, which accounts for 80% of all respondents. This indicates that the productive age group is the most active segment in carrying out banking transactions via e-banking. The increasing need for banking transactions at this age explains the success of penetration in this age group. In terms of education, the majority of respondents had a bachelor degree educational background (70%), followed by senior high school (20%), and postgraduate Masters/Doctoral (10%). This shows that the majority of e-banking users have a fairly high level of education, perhaps due to easy access to and understanding of digital banking technology. The respondents' occupations also provide important insight, with most of them being private sector employees (40%). This could indicate that e-banking is highly relevant and well accepted among private sector workers who may have busy schedules.

In terms of income, most respondents (80%) have income below IDR 5 million. This shows that e-banking may be an affordable and relevant solution for the middle- to lower-income segment of users. In looking at the duration of e-banking use, the majority of respondents (70%) used the service for 0 to 3 years, while only around 5% used it for more than 15 years. The release of the new e-banking application in 2018 may have influenced these findings. From the perspective of e-banking system usage, the majority of respondents (80%) have used the system for 0 to 3 years, reflecting strong adoption over a relatively long period of time. The data suggests that the e-banking application has been launched relatively recently. Only a small portion of respondents (5%) have used the e-banking system for around 10 years, reinforcing this understanding. Overall, the research results show that e-banking has succeeded in attracting interest and adoption, especially among the productive age group with a relatively high level of education. E-banking's positive growth in usage duration suggests that it will remain the primary choice for banking transactions in the future.

The analysis of the research results shows significant differences between the two proposed hypotheses. According to hypothesis 2 (H2), e-service quality significantly influences customer decisions in this situation, however hypothesis 1 (H1) contends that e-service quality has no discernible impact on customer satisfaction. The 0.002 p-value for H1 suggests that the relationship between e-service quality and customer satisfaction is not statistically significant. A low p value implies that the quality of the e-service may still fall short of what customers expect, proving that this element has no discernible impact on consumer satisfaction. As a result, in order to raise client satisfaction, some e-service quality factors must be improved. However, the substantial p value (0.52) for H2 shows that there is a considerable correlation between customer decisions and the quality of e-services. Consumers who think well of the e-service can increase their faith in the online banking platform. This confidence could be predicated on the platform's simplicity, security, and service dependability. To ensure client happiness, the platform should concentrate on raising the caliber of its e-service offerings. To better understand the particular factors that affect customer happiness and create more potent plans for raising service standards, more research can be done. Over time, it is anticipated that improvements in the quality of e-services will raise client satisfaction and e-banking system trust.

Analysis of the research results shows that there are two hypotheses, namely H3 and H4, which show positive significance between customer satisfaction and customer decisions regarding the e-banking system. With a p value for H3 of 0.3, which is considered significant, this hypothesis states that customer satisfaction has an influence on customer decisions. In this context, customer satisfaction with the services provided by the e-banking system plays an important role in shaping customer decisions. Customer satisfaction creates trust in the e-banking system, resulting in positive decisions from customers to continue using the service. The p value for H4 is 0.2, which is also considered significant, indicating that customer satisfaction also influences e-loyalty decisions. This means that customer satisfaction with e-banking system services contributes positively to customer loyalty towards the system. Customers who feel satisfied are more likely to continue using the e-banking system they have chosen, forming a loyal attitude that can have a positive impact on retention and continued use of the service. Thus, it is important to continuously increase customer satisfaction levels by understanding their needs and expectations. Efforts to improve service quality, provide innovative solutions, and respond to customer feedback can be effective strategies for maintaining satisfaction and encouraging loyalty towards the e-banking system. In conclusion, service quality and customer satisfaction are key factors that contribute to customer decisions and loyalty when using the e-banking system.

According to an analysis of the study's findings, there is a positive correlation between consumer trust and e-loyalty decisions (H5). It is clear from the p value of 0.98, which is deemed significant, that consumer loyalty to
the e-banking system is positively impacted by customer trust. This hypothesis states that the trust that customers have in the services provided by the e-banking system has a positive impact on their decision to remain loyal to using the service (e-loyalty). Customers who believe in the reliability, security, and service quality of the e-banking system tend to maintain consistent use of the service. Thus, customer trust is a key factor in forming customer loyalty towards the e-banking system. Efforts to build and maintain the level of customer trust must be the focus of strategy, including improving system security, service transparency, and effective communication with customers. In the context of this research, the significant results for H5 indicate that customer trust is not only an important element in influencing decisions to use e-banking systems but also has a positive impact on loyalty attitudes towards these services. Therefore, managing and increasing customer trust needs to be a priority in efforts to increase e-loyalty and maintain the customer base in the e-banking industry.

Data analysis shows that hypothesis 1 (H1) shows positive significance, with a p value of 0.52. The results demonstrate that e-service quality significantly influences customer decisions in the context of using the e-banking system. These results indicate that the e-banking system's service quality positively impacts customer decisions. In other words, when customers feel that the service, they receive has a good level of quality, this can increase their trust and motivate them to make positive decisions regarding the use of the e-banking system.

Factors that may influence e-service quality include transaction speed, security, responsiveness to customer requests, and ease of use. Well elaborating on all these aspects in e-banking services can increase customers' inclination to choose and continue using the system. Therefore, a strategy that focuses on improving the quality of e-service services can be an effective step in increasing customers' positive decisions regarding the use of e-banking systems. This can involve technology updates, staff training, and continuous improvement based on customer feedback. By maintaining and improving service quality, banking institutions can build trust and increase customer acceptance and positive decisions regarding e-banking systems.

Data analysis shows that hypothesis 2 (H2) shows positive significance, with a p value of 0.3. These results indicate that customer satisfaction positively influences customer decisions in the context of using the e-banking system. The interpretation of these results is that customer satisfaction with the services provided by the e-banking system has a positive impact on customer decisions. When customers are satisfied with the service, this can create greater trust in the e-banking system, which in turn influences the customer's decision to continue using the service. Factors that may influence customer satisfaction include service quality, response to problems, ease of use, and the overall user experience. If customers feel that their needs and expectations are well met by the e-banking system, they tend to be more satisfied and more likely to maintain a positive attitude towards using the system. Thus, companies or banking institutions can focus their strategies on increasing customer satisfaction by understanding their needs and expectations. This can involve implementing service improvements, improving communication with customers, and providing better solutions to problems that may arise. By increasing customer satisfaction, banking institutions can strengthen trust and support positive customer decisions regarding the use of e-banking systems.

Data analysis shows that hypothesis 3 (H3) shows positive significance, with a p value of 0.98. These results demonstrate that customer satisfaction significantly influences customer decisions regarding e-loyalty in the context of using the e-banking system. The interpretation of these results is that customer satisfaction with the services provided by the e-banking system has a major impact on customers' loyal attitudes towards the system. When customers are satisfied with e-banking services, they tend to form a loyal attitude and choose to continue using the system. System reliability, security, additional features provided, and clarity of information related to services may influence the relationship between customer satisfaction and e-loyalty. If customers feel that an e-banking system provides a reliable, secure solution and meets their needs, they are more likely to maintain high levels of e-loyalty. Therefore, organizations can focus on increasing customer satisfaction as a strategy to enhance e-loyalty. This can include updating services, providing incentives to loyal customers, and creating an overall better user experience. By building customer satisfaction, banking companies or institutions can strengthen e-loyalty, create a loyal customer base, and support long-term growth in the use of e-banking systems.

With a p value of 0.2, data analysis reveals that hypothesis 4 (H4) exhibits positive significance. This indicates that in the context of using the e-banking system, client decisions regarding e-loyalty have been shown to be influenced by customer trust. These findings are interpreted to show that a customer's loyalty to the e-banking system is significantly influenced by their level of trust in the system. When customers feel confident in the reliability, security, and service quality of the e-banking system, they are more likely to form a loyal attitude and choose to continue using the system. Factors that may influence the relationship between customer trust and e-loyalty involve system security, clarity of information, and responsiveness to customer problems or questions. If customers feel that the e-banking system is reliable and secure and that their trust is valued by the service provider, they are more likely to maintain high levels of e-loyalty. Therefore, organizations should focus on increasing customer trust as a strategy to enhance e-loyalty. This may include improving system security, transparent communications, and efficient handling of customer issues. By building customer trust, banking
companies or institutions can strengthen e-loyalty, create a loyal customer base, and support long-term growth in the use of e-banking systems.

The analysis from Hypothesis 1 to Hypothesis 4's results demonstrate the relevance of the relationships between the variables, which makes a significant contribution to our knowledge of these relationships in the context of using e-banking systems. The four primary factors at play here are e-loyalty, e-service quality, e-trust, and customer pleasure. The study's findings offer insights that are similar to those from earlier investigations using related variables. The e-service quality variable has an impact on customer satisfaction, customer trust, and e-loyalty, according to consistent research findings. Accordingly, providing clients with high-quality online banking services can boost their level of happiness, foster their trust, and eventually help them develop a system loyalty mindset. It was also discovered that the significance of customer satisfaction in developing consumer trust and e-loyalty was consistent with earlier study findings. To put it another way, client happiness with e-banking services is essential to building client trust in the system and, eventually, promoting service loyalty. Lastly, results that are consistent with earlier studies show that e-loyalty is influenced by customer trust as well. This indicates that consumer loyalty to the service is positively correlated with the degree of customer trust in the e-banking system. Both e-banking providers and users can benefit greatly from the deep insights this research offers. Building and sustaining client trust, emphasizing the caliber of e-banking services, and eventually raising e-loyalty levels are some of the implications that could lead to an improvement in customer satisfaction. These findings can be used as a guide for segmentation strategies and marketing initiatives to increase the success and acceptance of e-banking systems. Future research should consider additional variables or specific contexts that may influence the relationship between these variables. However, overall, these findings provide a valuable contribution to the understanding of the factors that influence customer behavior and decisions when using e-banking systems.

4. Conclusion

This study shows that customer trust in service is significantly impacted by the quality of e-services, which includes metrics like important, comfortable, cost- and time-saving, rapid, interactive, free of charge, and physical. The e-banking system is able to increase client trust in the caliber of services offered, particularly in terms of security, confidentiality, and privacy, as shown by a p value (probability) of 0.52. Furthermore, it has been demonstrated that customer service trust is significantly influenced by customer satisfaction service quality, which is measured using the pleasure, trust, and satisfaction indicators. This conclusion, which has a p value of 0.3, shows that customers are not only satisfied with the e-banking system, but they also feel more confidence using it when it comes to security, information, and privacy concerns. E-loyalty services are found to be significantly impacted by the quality of customer trust service, which encompasses positive signs, recommendations, suggestions, considerations, and business. With a p value of 0.98, the e-banking system's quality services increase client confidence when transacting and promote service loyalty. Finally, the results demonstrate that loyalty services, which include positive indications, recommendations, suggestions, considerations, and business, are significantly impacted by customer satisfaction service quality as measured by happiness, trust, and satisfaction indicators. The e-banking system's ability to generate customer satisfaction is demonstrated by the decreased (0.2) p value, which has a significant influence on the attitudes of loyalty held by the customers. The Structural Equation Model (SEM) technique was utilized in this study's data analysis, and AMOS was used as a measurement tool. These findings, then, offer comprehensive information to both e-banking providers and customers and show how to enhance service quality to increase client loyalty and trust while utilizing e-banking systems.

Although this research makes an important contribution, there are several suggestions that can be given to improve the quality and relevance of this research, both for companies and for further research. The main focus of this suggestion is on the relationship between customer satisfaction service quality and e-loyalty, which has the lowest probability value, namely 0.2, among other related variables. Companies, especially banks, need to consider improving services for online customer satisfaction to increase the level of customer loyalty. This improvement can be focused on recommendations and weighing indicators in the use of the e-banking system. This aims to minimize the possibility of decreasing customer loyalty and ensure that the use of the e-banking system remains optimal. Further research should focus on improving research tools, such as statistical tools, to enhance the accuracy of test results. This is to ensure the test results have a higher level of accuracy. Future research could also consider adding variables or modifying the model based on input from experts so that system user assessments and needs can be explained in more detail. Furthermore, researchers should combine quantitative and qualitative methods to enhance the generalizability and contextual understanding of research results. Qualitative methods can provide deeper insight into the factors that influence customer satisfaction and loyalty. Implementing these suggestions will enable this research to continue developing, providing greater added value, and becoming the basis for further research in the field of e-banking and customer satisfaction.
References


