The Influence of E-Service Quality and Service Innovation on User Loyalty in the Livin' By Mandiri Application with User Satisfaction as an Mediating Variable (Study of Livin' By Mandiri Users in Pontianak City)

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Keywords: E-Service Quality, Service Innovation, User Satisfaction, User Loyalty

Abstract
This study aims to examine and analyze the effect of e-service quality and service innovation on user loyalty with user satisfaction as the intervening variable. The type of research used in this study is causal associative, and data collection techniques are carried out by distributing questionnaires through the Google form application. The population in this study are Livin' By Mandiri users in Pontianak. The sample used was 100 respondents through non-probability sampling technique with a purposive sampling method. The analysis technique used is Path Analysis using SPSS for windows version 26. The results show that e-service quality has a positive and significant effect on user satisfaction, service innovation has a positive and significant effect on user satisfaction, e-service quality has a positive and significant effect on user loyalty, service innovation has a positive and significant effect on user loyalty, user satisfaction has a positive and significant effect on user loyalty, user satisfaction mediates the effect of e-service quality on user loyalty, and user satisfaction mediates the effect of service innovation on user loyalty.

A. INTRODUCTION
The rapid development of technology has led banking institutions to create mobile banking with the internet, whose services and utilization capacity are considered more effective and efficient because they can expand the range of transaction services. Mobile banking allows customers to carry out financial services using electronic media handheld devices, such as smartphones (Oliveira et al., 2014), which connect customers to a server to make payments and transactions, as well as perform other services. One of the banking institutions that implements mobile banking is Bank Mandiri.
The digital transaction service using electronic devices provided by Bank Mandiri is called Livin’ by Mandiri. Livin’ by Mandiri was launched on 2 October 2021. Livin’ by Mandiri provides improved digital services in the form of additional investment features, Sukha, and branch services to simplify and adapt to the increasingly diverse needs of users. Livin’ by Mandiri was launched in less than one year as of June 8, 2022, but has already managed to reach thirteen million (Romualdus, 2022). Bank Mandiri is one of the best banks in terms of customer loyalty. The awards it receives prove this. At the 2022 Global Contact Center World Awards, Bank Mandiri won the award for Best Customer Loyalty in various industries throughout Asia Pacific. The award achieved is indeed inseparable from the innovation and quality of service that Bank Mandiri is increasingly improving. Based on research conducted by Seesaiprai (2016), it was found that customer loyalty is influenced by service innovation and service quality.

Bank Mandiri’s success in winning an award at the 2022 Global Contact Center World Awards has given rise to business competition between the banking sectors. The current competition is increasingly competitive and innovative, making business people more careful in observing market share. An important factor supporting market share mechanisms is creating service innovations that make every consumer’s needs more accessible. Service innovation is a modification made by a company to improve its marketing system by accelerating service performance through new combinations (Suwarno in Antanegoro, 2017). An important thing that is needed now is to increase the positive impact of technological innovation on a company’s competitive advantage (Porter, 1990). According to Kim and Mauborgne (2005), the right solution to survive in a competitive market is to innovate. Service innovation adapts to ever-changing consumer needs and is of great concern to organizations, so organizations look for innovative ways to meet customer needs and keep them competitive (Christensen et al., 2005).

The current competitive scope of business means that the search for customer satisfaction highly depends on the company’s overall service quality, an essential strategy (Paradise-Tonrow, 1991). According to Worodiyanti (2016), consumer satisfaction is the
consumer's overall assessment of the performance of the goods and services they consume, and the results they receive must at least be in line with consumer expectations. The main factor that must be considered is the quality of the electronic services provided. According to Sriyanto and Utami (2016), service quality is the ability of a good or service that influences its ability to meet consumer needs. The level of consumer satisfaction depends on the customer's assessment of the quality of the services provided (Ishak et al., 2006). Continuously increasing consumer satisfaction will result in consumer loyalty (Deng, 2010). The quality of the service provided will influence customer satisfaction. It will create customer loyalty. This opinion is supported by research conducted by Laurent (2016), which states that E-service quality influences customer loyalty through customer satisfaction.

Consumer satisfaction based on the quality of electronic services and service innovation provided by Livin' by Mandiri will ultimately result in consumer loyalty. This opinion is supported by research conducted by Utami and Wartini (2015) that satisfaction can mediate service innovation on customer loyalty. Consumer satisfaction is the main factor in determining consumers' desire to make repeat purchases in the future (Mittal & Kamakura, 2001). Consumer loyalty is measured by how often consumers make repeat purchases and even recommend them to others.

B. LITERATURE REVIEW

E-Service Quality and User Satisfaction

E-service quality meets the needs of users to access information and complaints only via smartphones and internet facilities. It is stated in this research that users are satisfied with the ease of this service (Chesanti & Setyorini, 2018). E-service quality provided in a quality manner and with good competence will make it easier for users to fulfill their needs by accessing information and carrying out purchase transactions. The absence of obstacles to electronic services means that users' expectations are met, and satisfaction arises (Ulum & Muchtar, 2018). Therefore, providing consumers with quality electronic services will help consumers meet their needs. In order to encourage consumers to prefer the products or
services provided by the organization, consumer expectations must be met by the level of service offered. This implies that customer satisfaction will increase in proportion to how good the quality of the company's e-services is offered.

**H1: E-service quality has a positive and significant effect on user satisfaction**

**Service Innovation and User Satisfaction**

The development of service innovation in this increasingly modern era will create consumer satisfaction because the innovation provided adapts to increasingly varied consumer needs (Wiguna et al., 2022). Modifying the service system to speed up the service work system can create consumer satisfaction in meeting increasingly innovative needs (Syauqi, 2019). Based on previous research, service innovation aims to speed up the service work system by utilizing various existing service characteristics to increase customer satisfaction. When there are no obstacles during service, customers will feel satisfied.

**H2: Service innovation has a positive and significant effect on user satisfaction**

**E-Service Quality and User Loyalty**

Customers will be loyal to electronic applications when the e-service quality provided is very competent and helpful to customers. Customer loyalty in using electronic applications is, of course, based on good service quality (Ibrahim et al., 2021). Reliable e-service quality will undoubtedly provide a good transaction experience for consumers, of course, this will result in consumer loyalty to repeat transactions with the company, or in other words, consumer loyalty has been created (Messakh, 2016). Customer loyalty will increase when they have a good transactional experience. Customers will use the company's goods or services again if they receive good service. This shows that improving the quality of the company's e-service will increase customer loyalty.

**H3: E-service quality has a positive and significant effect on user loyalty**
Service Innovation and User Loyalty

Today's user needs are increasingly varied, requiring companies to continually improve their service operational systems to be more effective and efficient. Companies that continue to innovate according to user needs can make users loyal so that they continue to use the company's products or services (Rantyanti & Halim, 2020). The higher the service innovation a company implements, the higher the customer loyalty to that company because it is felt that the company can adapt to increasingly varied customer needs (Kaloko, 2020).

H4: Service innovation has a positive and significant effect on user loyalty

User Satisfaction and User Loyalty

Customers will return to use the product or service as long as the expectations and reality obtained are met well, in other words, they feel satisfied, thus producing loyal customers (Rachmawati, 2014). The sense of satisfaction received by customers is directly proportional to the creation of loyal customers (Anggraeni et al., 2019). The greater the customer's sense of satisfaction after receiving a product or service, the greater the loyalty to always use the company's product or service (Santika & Pramudana, 2018). Based on this, customer loyalty increases in line with customer satisfaction.

H5: User satisfaction has a positive and significant effect on user loyalty

E-Service Quality Towards User Loyalty Through User Satisfaction

Customer loyalty will increase when customers feel satisfied with the quality of the services provided (Laurent, 2016). Good service quality in the application provided by the company will create a sense of satisfaction in customers, causing customers to make repeat purchases, in other words, they will become loyal to the product or service (Akbar et al., 2021). It can be concluded that loyal customers are based on feelings of satisfaction with the quality of service provided by the company.

H6: E-service quality has a positive and significant effect on user loyalty through satisfaction
Service Innovation Towards User Loyalty Through User Satisfaction

The higher customer satisfaction based on the service innovation factors created, the more direct the resulting customer loyalty will be (Utami & Wartini, 2015). Service innovation must create value for customers so that customers feel satisfied with the service innovation that has been carried out. Customers who are satisfied with service innovations that are increasingly effective and efficient will create customer loyalty (Kaloko, 2020). The existence of service innovation provided to speed up the service system, making it easier for customers so that customers feel satisfied, will have an impact on customer loyalty.

H7: Service innovation has a positive and significant effect on user loyalty through satisfaction

Conceptual framework

Based on a review of the theoretical basis and previous research, the following research conceptual framework can be put forward:

Figure 1. Research Framework
C. METHOD

This study employs a quantitative methodology and a comparative causal approach. Those thought to fit the predetermined criteria are given a questionnaire to complete as part of this study. A Likert scale with five categories is used in the questionnaire. The categories are: Strongly Agree (5 points), Agree (4 points), Undecided (3 points), Disagreement (2 points), and Strongly Disagree (1 point).

The study’s participants were Pontianak’s Livin’ by Mandiri users. Purposive sampling, a nonprobability sampling approach, is used in this study. The following are examples of the criteria: Respondents must meet the following requirements: 1) live in Pontianak; 2) use the Livin’ by Mandiri application and have transacted there at least twice in the previous two months; 3) have used at least twice the most recent features (investment features, Sukha, and branch services); 4) be at least 17 years old.

Based on the replies of Indonesian public respondents, this seeks to ascertain interest in buying movies. The e-service quality and service innovation variables are the independent factors in this study; user pleasure is the mediating variable, and user loyalty is the dependent variable. In this study, 100 respondents served as samples. These samples were then examined using statistical methods and the SPSS version 25 software.

D. RESULTS AND DISCUSSION

Respondent Characteristics

The analysis of respondent profiles in this survey is based on the following demographics:

<table>
<thead>
<tr>
<th>Categories</th>
<th>Item</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>44</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>56</td>
<td>56%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Age</td>
<td>17-25 years old</td>
<td>50</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>26-35 years old</td>
<td>38</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>36-45 years old</td>
<td>11</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>&gt;45 years old</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>
Instrument Test

The results of validity and reliability tests using the SPSS version 26 program can be presented as follows:

Table 2. Validity Test Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Item</th>
<th>r-value</th>
<th>r_{table}</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality (X1)</td>
<td>X1.1</td>
<td>0.763</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X1.2</td>
<td>0.612</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X1.3</td>
<td>0.652</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X1.4</td>
<td>0.624</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X1.5</td>
<td>0.663</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X1.6</td>
<td>0.629</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td>Service Innovation (X2)</td>
<td>X2.1</td>
<td>0.552</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X2.2</td>
<td>0.660</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X2.3</td>
<td>0.597</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X2.4</td>
<td>0.687</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X2.5</td>
<td>0.645</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>X2.6</td>
<td>0.689</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td>User Satisfaction (Z)</td>
<td>Z.1</td>
<td>0.857</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>Z.2</td>
<td>0.897</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>Z.3</td>
<td>0.863</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td>User Loyalty (Y)</td>
<td>Y.1</td>
<td>0.753</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>Y.2</td>
<td>0.600</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>Y.3</td>
<td>0.728</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
<tr>
<td></td>
<td>Y.4</td>
<td>0.717</td>
<td>0.1966</td>
<td>Valid</td>
</tr>
</tbody>
</table>
Based on the data in Table 2, it is known that all question items from each indicator have a calculated r-value of more than r table, namely above 0.1966 with a total of 19 questions from the variables e-service quality, service innovation, user satisfaction, and user loyalty with the results of all valid question items.

Table 3. Reliability Test Results

<table>
<thead>
<tr>
<th>Variabel Penelitian</th>
<th>Cronbach Alpha</th>
<th>Reliable Standards</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality</td>
<td>0.735</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
<tr>
<td>Service Innovation</td>
<td>0.707</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
<tr>
<td>User Satisfaction</td>
<td>0.842</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
<tr>
<td>User Loyalty</td>
<td>0.657</td>
<td>0.6</td>
<td>Reliable</td>
</tr>
</tbody>
</table>

The reliability test refers to the resulting Cronbach Alpha value, which is then compared with the comparison value, which is 0.6. The test results show that all variables have a Cronbach Alpha value above 0.6, which means all variables in this study are reliable.

Classical Assumption Test

Classical assumption tests in this research include normality, multicollinearity, heteroscedasticity, and autocorrelation tests. The results of the first and second sub-structure normality tests show the value of Asymp.Sig. (2-tailed) is 0.200 or greater than 0.05, so the residuals from the first sub-structure data are normally distributed. Meanwhile, the results of the multicollinearity test in the First Sub-Structure show that the Tolerance value of the two independent variables is more significant than 0.10, namely 0.756, as well as the VIF value, which is smaller than 10, namely 1.322, while in the second Sub-Structure it shows that the Tolerance value of the three independent variables is more significant than 0.10, namely 0.505, 0.620 and 0.420, as well as the VIF value which is smaller than 10, namely 1.979, 1.614 and 2.381. So, there is no multicollinearity in the first and second sub-structures. The results of the Heteroscedasticity test also did not show any symptoms of heteroscedasticity in both the first and second sub-structures, where all independent variables had sig values greater than 0.05. The autocorrelation test is carried out using the Durbin Watson (DW) statistical test, namely comparing the DW value with the lower limit.
(dL) and upper limit (dU) values in the Durbin Watson table. The results of the autocorrelation test show that the autocorrelation coefficient is equal to zero, meaning there is no autocorrelation in the first and second sub-structure regression models where the Durbin-Watson value found in the first sub-structure is 1.809 and 2.127 in the second sub-structure which is compared to the limit value lower (dL) and upper limit (dU) with a significance level of 5%, total data 100.

**Hypothesis testing**

Hypothesis testing in this research can be presented as follows:

**Table 4. First Sub-Structure t Test Results**

<table>
<thead>
<tr>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

*a. Dependent Variable: Kepuasan Pengguna*

Based on Table 4, the results of partial hypothesis testing can be explained as follows:

**H1:** Based on the results of the t-test in Table 4.26, the beta coefficient value for the E-Service Quality variable is 0.525 with a significance value of 0.000, where this value is smaller than 0.05 so that hypothesis 1 is accepted, which means that the E-Service Quality variable has a positive effect on User Satisfaction with the Livin’ by Mandiri Application in Pontianak City.

**H2:** Based on the results of the t-test in Table 4.26, the beta coefficient value for the Service Innovation variable is 0.350 with a significance value of 0.000, where this value is smaller than 0.05 so that hypothesis 2 is accepted, which means that Service Innovation variable has a positive effect on User Satisfaction with the Application Livin’ by Mandiri in Pontianak City.

**Table 5. Second Sub-Structure t Test Results**

<table>
<thead>
<tr>
<th>Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>E-Service Quality</td>
</tr>
</tbody>
</table>
Based on Table 5, the results of partial hypothesis testing can be explained as follows:

**H3:** Based on the results of the t-test in Table 4.27, the beta coefficient value for the E-Service Quality variable is 0.373 with a significance value of 0.000, where this value is smaller than 0.05 so that hypothesis 3 is accepted, which means that the E-Service Quality variable has a positive effect on User Loyalty to the Livin' by Mandiri Application in Pontianak City.

**H4:** Based on the results of the t-test in Table 4.27, the beta coefficient value for the Service Innovation variable is 0.185 with a significance value of 0.003, where this value is smaller than 0.05 so that hypothesis 4 is accepted, which means that the Service Innovation variable has a positive effect on User Loyalty in the Application Livin' by Mandiri in Pontianak City.

**H5:** Based on the results of the t-test in Table 4.27, the beta coefficient value for the User Satisfaction variable is 0.455 with a significance value of 0.000, where this value is smaller than 0.05 so that hypothesis 5 is accepted, which means that the User Satisfaction variable has a positive effect on User Loyalty in the Application Livin' by Mandiri in Pontianak City.

<table>
<thead>
<tr>
<th>Hipotesis</th>
<th>Sobel Test</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Service Quality → User Satisfaction → User Loyalty</td>
<td>5,70</td>
<td>0,000</td>
</tr>
<tr>
<td>Inovasi Layanan → User Satisfaction → User Loyalty</td>
<td>4,59</td>
<td>0,000</td>
</tr>
</tbody>
</table>

**H6:** Sobel test calculations show that the mediation value of the user satisfaction variable is 5.70. A variable is said to mediate if the value obtained through the Sobel test is more significant than 1.96, with a significance of less than 0.05. Based on these results, user satisfaction mediates e-service quality and user loyalty, so hypothesis 6 can be accepted.

**H7:** Sobel's test calculation of the mediation value of the user satisfaction variable is 4.59. A variable is said to mediate if the value obtained through the Sobel test is more significant than 1.96, with a significance of less than 0.05. Based on these results, it can be stated that user satisfaction mediates between service innovation and user loyalty, so hypothesis 7 can be accepted.
E. Conclusion

E-Service Quality has a significant effect on User satisfaction and loyalty. The Livin’ by Mandiri application is believed to influence satisfaction because it can be accessed quickly, is easy to use, is always available and does not jam when used, protects user’s personal information, and fulfills the needs of Livin’ by Mandiri users in Pontianak City. This is also confirmed by research from Chesanti and Setyorini (2018) and Ulum and Muchtar (2018), which states that E-service quality meets the needs of users to access information and their needs only via smartphones and internet facilities so that users feel satisfied with the ease of this service. Likewise, research conducted by Ibrahim et al. (2021) showed that customers would be loyal to using electronic applications when the e-service quality provided is very competent and helpful to customers.

Service innovation has a significant effect on user satisfaction and loyalty. Livin’ by Mandiri presents innovations that save time and make it possible to reduce costs for Livin’ by Mandiri users in Pontianak City. Accelerate the service work system by utilizing various existing service characteristics to increase Livin by Mandiri user satisfaction, especially in Pontianak City. When there are no obstacles to the innovation provided, customers will feel satisfied. This is supported by research conducted by Wiguna, Ramdan, & Norisanti (2022) that developing service innovation in this increasingly modern era will create consumer satisfaction because the innovation provided adapts to increasingly diverse consumer needs. This is also in line with research conducted by Rantyanti and Halim (2020) that current user needs are increasingly varied, requiring companies to always improve their service operational systems to be more effective and efficient.

User Satisfaction has a significant effect on Loyalty. User Satisfaction also plays a role in mediating the relationship between E-Service Quality and Service Innovation on Loyalty. Livin’ by Mandiri customers will return to use the product or service as long as their expectations and reality are met well, in other words, they feel satisfied, resulting in loyal customers. This is also supported by research conducted by Santika and Pramudana (2018),
which states that the greater the customer’s sense of satisfaction after receiving a product or service, the greater the customer’s loyalty to always using the company’s product or service.

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