The Role of Perceived Risk and Perceived Ease of Use Mediates the Effect of Service Quality on Mobile Banking Use (Study on BNI Mobile Banking Users in Denpasar City)

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Abstract - The purpose of this study was to explain the role of perceived risk and perceived ease of use in mediating the effect of service quality on the use of BNI Mobile Banking in Denpasar City. The population in this study are all customers who are active users of BNI Mobile Banking in Denpasar City in 2022. The number of samples taken was 100 respondents using probability sampling technique, simple random sampling with sample criteria, namely active customers using BNI Mobile Banking during 2022. Data collection was carried out by distributing questionnaires and analyzed using the SEM-PLS analysis technique. The results of the study found that service quality and perceived ease of use had a positive and significant effect on the use of BNI Mobile Banking, service quality had a negative and significant effect on perceived risk, service quality had a positive and significant effect on perceived ease of use, perceived risk had a negative and significant effect on the use of mobile banking, perceived ease of use has a positive and significant effect on perceived risk, as well as perceived risk and perceived ease of use are able to mediate service quality on the use of BNI Mobile Banking.

Keywords - Perceived risk, Perceived ease of use, Service quality, Mobile banking use.

1. Introduction

One of the businesses currently affected by the development of information and communication technology is banking. According to Lailani and Regina (2021), increasing global competition in the banking sector has spurred banks to look for innovative ways to win the competition. In the banking industry, the use of information technology (Mobile Banking) is a form of service carried out with the aim of making it easier for customers to carry out financial (banking) transactions. Good service will shape the customer's positive attitude towards the company and the intention to continue using the banking services concerned. Mobile Banking, in general, is a Bank distribution channel to access accounts owned by customers through data delivery technology via cell phones or general package radio service (GPRS) by means of cellular telephones (cell phones) (Miftahuddin and Hendarsyah, 2019).

Mobile Banking is defined as a facility for bank customers to be able to carry out their banking activities more freely, anywhere, anytime, and without having to visit the bank physically. The benefits of mobile banking can be used for interbank book transfer transactions, interbank transfers, balance information, and account mutations for up to 20 transactions (Jumaini 2012 in Miftahuddin and Hendarsyah, 2019).

The advantage of mobile banking is that customers can make transactions anywhere and anytime without being limited by time. Services in mobile banking include financial transactions, non-financial transactions, fund transfers, balance checks and bill payments made via cellular phones (Sebayang 2017 in Miftahuddin and Hendarsyah, 2019).

Now almost every bank in Indonesia, both government and private, conventional and sharia banks, have used Mobile Banking services in conducting banking transactions, including Bank Negara Indonesia, which is named the mobile banking facility BNI mobile. Bank Negara Indonesia (BNI) is one of the state-owned banks that has used mobile banking services in banking transactions.

Based on data obtained through databoks.katadata.co.id, as of September 2021, BNI mobile banking service users have reached more than 9.9 million people. This figure increased rapidly from the previous year.
Compared to the 3rd quarter 2020 report, there were more than 6.7 million service users at that time. This means that on a year-on-year basis, there was a growth of 46.6 percent.

Moreover, when compared to 2019, the number of users has doubled. In addition, the BBNI-coded issuer's report for the 3rd quarter of 2021 also states that there are around 11.7 transactions by active users every month. The increase in the number of mobile banking users was in line with the increase in transaction value which reached IDR 447 trillion.

Based on information obtained from the databox, in 2021, the number of BNI Mobile Banking users will reach 8.56 million or grow 58.4% compared to the same period last year. The transaction value reached IDR 138 trillion in March 2021, growing 33.2% compared to March 2020. BNI Mobile Banking also launched the latest features to complement its services. Among other things, Biometric Login, opening digital accounts with facial recognition features, managing credit card bills, developing e-wallets, and developing QR payments.

Many factors affect the level of customer acceptance of the BNI mobile banking application, one of which is the usability factor. The usability factor is important to study because, based on previous research, the usability factor is thought to influence service quality in using the BNI mobile banking application. When using a banking service, usability is one of the things customers see. Customer who feels that the BNI mobile banking application service has been used will tend to be interested in continuing to use the BNI mobile banking application service if the service is considered capable of meeting their needs and providing benefits in the future. In addition to the usability factor, the convenience factor is also something important. Convenience is considered important for research because if this application is easy to understand in its use, then customers will be interested in continuing to use the BNI mobile banking application.

Based on previous research, if the system in BNI mobile banking services is difficult to understand in using its features, banking customers tend to continue to use ATM services or visit banking branch offices in person. Customers will choose to use the BNI mobile banking application rather than an ATM if the quality of the service is usable and the method of use is easy for customers to understand. (Pratama et al., 2019). Furthermore, the advantages possessed by BNI mobile banking are that it can make it easier for bank customers to make transactions anytime and anywhere, but it is very unfortunate that there are still many bank customers who have not used this service and prefer to use ATMs or go directly to bank branches instead of using the BNI mobile banking application for making transactions or just getting information about bank balances, even though this requires a longer time.

Anak (2018) states that in the process of using an information system, most users will see convenience, and the more they think the system is simple, the more likely it is to use it. In this way, one tends to be more loyal to the system. Similar results were stated by Rusdi et al. (2018), that theoretically, perceived ease of use has a significant effect on consumer intentions in using mobile commerce. In contrast to the results of this study, research by Kahar et al. (2018) states that perceived ease of use does not significantly affect consumer intentions to repurchase.

Many consumers feel that the use of a complicated payment system and procedure is something that online businesses must consider. This also applies to the use of BNI mobile banking, which is considered complicated and data theft and fraud often occur, making customers feel that cashier services are the right choice. In line with Rudi Adianto's statement as an IT observer who stated that the security system at BNI mobile banking is currently not considered secure. According to him, authentication through the cellphone number used by BNI mobile banking must be supplemented with other protection mechanisms. Judging from the majority of cases of BNI mobile banking breaches in Indonesia, it started with the mobile number being taken over. With the various cases currently happening, Rudi dares to say it is unsafe (Budiansyah, 2020).

In addition, the reasons people choose not to adopt mobile banking are privacy and confidentiality issues from the new electronic channels offered by banks, information delays, and system errors may also occur (Mazhar et al., 2014). Islam et al. (2018) state that perceived risk in mobile commerce services significantly influences the implementation of mobile commerce services. Surya (2017) in his research stated that perceived risk influences online purchases. Therefore, it is necessary to provide good and quality services, such as providing clear information related to instructions and procedures for using mobile banking so that existing risks are minimized, which will influence customer behavior in using BNI mobile banking services. The results of Hermawan's research (2019) in his findings state that perceived risk has a positive effect on consumer intentions in using mobile commerce.

Customer loyalty is one of the key success factors for a business to create competitive advantage and company sustainability from time to time (Puriwat and Tripopsakul, 2017). In the context of e-banking, customer loyalty is defined as the tendency of customers to visit bank websites frequently, regularly utilize e-banking services and spread positive word of mouth about e-banking services (Shankar and Jebarajakirthy, 2018). Customers are said to be loyal when they show loyalty to reuse sustainable products and
services despite external pressures such as marketing advertising activities and other situational influences (Raza et al., 2020). In order to maintain customer loyalty from competitors, banks must determine the right strategy so that customers do not switch to other banks. Every bank is required to create sustainable advantages in order to win the competition in the banking world.

According to Kotler and Keller (2018: 176), customer loyalty is basically influenced by service quality, where customers respond positively to the service quality of a company because it is in accordance with customer expectations, which means satisfied customers, which is the key to producing high customer loyalty. In today's banking business, providing high-quality mobile banking services is considered a basic strategy to gain a competitive advantage (Makanyeza and Chikazhe, 2017).

There is a research gap in the results of Al-Khayyal et al. (2020), which shows that the quality of electronic services does not directly affect e-loyalty. The results of this study actually reveal that the quality of electronic services indirectly influences e-loyalty through the electronic trust variable. Several previous studies have shown that service quality has a positive and significant effect on trust (Arcand et al., 2017; Gunawan, 2017; Al-Khayyal et al., 2020) and electronic trust has a positive and significant effect on e-loyalty (Al-Dweeri et al., 2019).

2. Research Hypothesis
2.1. The Effect of Service Quality on the Use of Mobile Banking

The results of previous research in the service sector conducted by Andalusi (2018) state that service quality has no significant effect on customer satisfaction. This happens because service quality is not the main factor that forms customer satisfaction. However, research conducted by Manjunath and Aluregowda (2013) states that an important element in creating satisfaction and creating customer loyalty is service quality. According to Aditya and Kusumadewi (2017), service quality positively and significantly affects customer satisfaction. The results of this study indicate that the better the quality of the services provided, the higher the customer satisfaction with the company. The results of this study are supported by research conducted by Chanming and Jianjun (2011) in their research also showing results that service quality also has a positive influence on customer satisfaction. Research conducted by Ardani (2012), in his research also found that there was a positive and significant influence between service quality on customer satisfaction. Wendha (2013) states that service quality has a positive and significant effect on Garuda Indonesia's customer satisfaction.

H1: Service quality has a positive and significant effect on the use of Mobile Banking.

2.2. The Effect of Service Quality on Perceived Risk

According to Suryani (2008 in Raiyan and Siregar, 2021), Perceived Risk can be said to be something that consumers will face, namely in the form of uncertainty, when consumers cannot know what will happen after a purchase has been decided, which is the perception that this risk will prevent someone from making a purchase to delay satisfaction. Peter and Ryan (1976) say that perceived risk is an obstacle to a person's buying behavior caused by the expectation of losses that will be experienced after purchasing the goods or services. Bima Sakti, Endang Siti Astuti, and Kertahadi (2014) concluded that the perceptions of information technology users, convenience, risk, and service features influence the interest of bank customers in using ATMs, convenience influences use, and service features affect usage. Hadi Samsul and Novi (2014) concluded that customer perceptions of security have a significant positive effect on mobile banking. Shahzad A.K et al. (2015) and Jennifer H.G (2019) stated that perceived risk in online shopping has a positive effect on consumer satisfaction, but this is not in line with research by Urvashi et al. (2017), Wi-Suk K. and Sharron J.L (2009) who stated that perceived risk in online shopping has a significant negative impact. Therefore, to minimize perceived risk, good service quality needs to be provided to consumers so that it does not prevent someone from making a purchase.

H2: Service quality has a positive and significant effect on perceived risk.

2.3. The Effect of Service Quality on The Perceived Ease of Use of BNI Mobile Banking

Consumer perceptions regarding ease of use are related to the extent to which consumers have expectations that information technology will not provide adaptation difficulties, both physically and mentally. Consumers will avoid a system that is difficult to use. The ease of use factor relates to how operational transactions are made online. Usually, prospective buyers will experience difficulties the first time they transact online and tend to discourage them due to security factors and not knowing how to transact online (Setyarko, 2016). Bima Sakti, Endang Siti Astuti, and Kertahadi (2014) concluded that the perceptions of information technology users, convenience, risk, and service features influence the interest of bank customers in using ATMs, convenience influences use, and service features affect usage. Alharbi and Drew (2012) found a significant effect of perceived ease of use on behavioral intention to use. In addition, the results of research by Septiani et al. (2017) said that perceived ease of use has a significant influence on behavioral intention to use. Providing good service to customers regarding instructions and procedures for conducting online transactions, especially in the use of mobile banking, will provide security and convenience for customers when using mobile banking.

H3: Service quality has a positive and significant effect on perceived ease of use.
2.4. The Effect of Perceived Risk on the Use of BNI Mobile Banking

Perceived risk plays an important catalytic role in many online financial transactions. If customers find differences in experience with their actual goals, they will perceive a higher risk, and in turn, the perceived risk will depend on the level of subjective uncertainty of the results. The less the user's aversion to risk issues, the more likely customers will adopt internet banking services (Martins, Oliveira, & Popović, 2014). This is supported by the results of Septiani’s research (2019), which shows that perceived risk has a positive influence on behavioral intention. Wessel and Drennan (2010), Lewis et al. (2010), and Hanafizadeh et al. (2014), in their research, found that perceived risk has a negative effect on intention. The higher the risk posed, the lower the user's interest in accepting a technology.

In addition, research conducted by Henry et al. (2017), Adiputra and Ruslim (2021), and Estella et al. (2019) shows that perceived risk has a direct effect on purchase intention. Meanwhile, Nyssa and Rahmidani's research (2019) shows that Perceived Risk has no significant effect on purchase intention. Maruf (2018) states that perceived risk has a positive and significant effect on attitudes, whereas, in online transactions, there are various perceptions of risk felt by consumers. This occurs because sellers and buyers do not meet in person to carry out buying and selling activities. Mulyana (2016) states that perceived risk has a positive and significant effect on interest, where higher perceived risk causes the person to have higher fear when transacting online. On the other hand, a low-risk perception makes a person not afraid of making online transactions.

H4: Perceived risk has a negative and significant effect on the use of Mobile Banking.

2.5. The Effect of Perceived Ease of Use on the Use of Mobile Banking

Someone will continue to use the application if they feel comfortable when using the application. So the meaning that can be given is that someone's desire to use the application will not have an effect without the comfort felt from using the application (Chandra and Santoso, 2022). This is supported by the research results of Ashghar and Nurlatifah (2020), Chandra and Santoso (2022), Juliana et al. (2020), Subagio et al. (2018), and Saraswati and Rahyuda (2021) which show that perceived ease of use affects purchase intention. Jayantari, Ida Ayu Agung Upadianti et al. (2021) show a positive and significant influence between perceived ease of use and satisfaction.

H5: Perceived ease of use has a positive and significant effect on the use of Mobile Banking.

2.6. The Effect of Perceived Risk on Perceived Ease of Use

Research conducted (Rejikumar & Ravindran, 2017) on “An Empirical Study On Service Quality Perceptions And Continuance Intentions In Mobile Banking Context In India”, which examines interest model modification, technology adoption to continuous use in the context of Mobile Banking in India, the research results show that the variables Perceived Service Quality, Perceived Usefulness, Perceived Credibility have a significant effect on the Satisfaction Variable, and the Satisfaction and Perceived Risk variables have a significant effect on the Continuance Intention Variable, while the Perceived ease of Use and Perceived Risk variables have no significant effect on Satisfaction variable.

In connection with the research above, this study explores customer satisfaction and continuous reuse of the BNI Mobile Banking application using several TAM Factor variables because there is still a research gap in the research that has been conducted (Rejikumar & Ravindran, 2017), especially on the Perceived Ease variable of Use and Perceived Risk variables.

H6: Perceived risk has a negative and significant effect on perceived ease of use.

2.7. The Role of Perceived Risk Mediates the Effect of Service Quality on the Use of Mobile Banking

According to Tjipitono (2018: 59) states, service quality is the level of excellence expected and control over this level of excellence to fulfill customer desires. Research by Wu et al. (2014), Chen (2012), Ling et al. (2011), Murwatiningsih et al. (2013) and Martinayanti (2016) note that there is a mediating relationship between trust and perceived risk and purchase intention.

The quality of services provided to consumers by online companies is very good; it will affect the purchasing decisions made by these consumers. In addition, with the provision of good service, customer perceptions related to risks in using mobile banking will also influence behavior to reuse mobile banking.

H7: Perceived risk mediates the effect of service quality on using BNI Mobile Banking.

2.8. The Role of Perceived Ease of Use Mediates the Effect of Service Quality on the Use of Mobile Banking

Good service quality related to the use of mobile banking will give customers perceptions of the ease of using mobile banking so that it will have an impact on customer behavior to reuse mobile banking. The results of the research by Pramesthi (2013), Faradila and Soesanto (2016), and Prathama and Sahetapy (2019) prove that perceived ease of use has a positive and significant effect on trust. The level of user confidence in the system they use is influenced by the level of perceived ease of use by the users of the system itself, as stated by Davis et al. (1989) and Venkatesh and Davis (2000) that the easier it is for technology to studied and applied, the higher a person's confidence to adopt and use the technology. The findings in this study have also proven that the higher the level of ease that
respondents feel in using the Bank Jambi Mobile application, the higher the trust of respondents in the application. 
H8: Perceived ease of use mediates the effect of service quality on using BNI Mobile Banking.

3. Materials and Methods

The location of this research was conducted at the BNI City Denpasar Bank. The time used by researchers for this research was carried out from December 2022 to March 2023. The population in this study is all customers who are active users of BNI Mobile Banking in Denpasar City in 2022. Sugiyono (2015: 91) suggests several rules in determining sample size, among others: sample sizes range from 30-500 for samples that are broken down into several categories, a minimum of 30 samples in a category, in multivariate research, the sample size should be multiplied by 5-10 by the number of variable indicators in the study.

In this study, the authors narrowed down the population, namely the number of active BNI Mobile Banking users in Denpasar City in 2022, as many as 127,307 customers by calculating the sample size, which was carried out using the Slovin technique according to Sugiyono (2015: 87). This study uses the Slovin formula because, in sampling, the number must be representative so that the research results can be generalized. The calculation does not require a table of the number of samples but can be done using simple formulas and calculations. The Slovin formula for determining the sample is as follows:

\[
n = \frac{N}{1 + Ne^2}
\]

Description of the Slovin formula above:
\(n\) = Sample size/number of respondents
\(N\) = Population size
\(e\) = Percentage of tolerance for accuracy of sampling error

In the Slovin formula, there are the following conditions:
The value of \(e\) = 0.1 (10%) for a large population
Value of \(e\) = 0.2 (20%) for a small population

So, the sample range that can be taken from the Solvin technique is between 10-20% of the study population. The total population in this study is 127,307 customers, so the percentage of allowance used is 10%, and the calculation results can be rounded up to achieve suitability. So, to find out the research sample, with the following calculations:

\[
n = \frac{127,307}{1 + 127,307 (0.1)^2}
\]

\[
n = \frac{127,307}{1,274}
\]

\[
n = 100
\]

Based on the calculation above, the sample who became respondents in this study was adjusted to as many as 100 respondents.

4. Results and Discussion

4.1. The Results of the Outer Model

The outer model measurement model is evaluated with the convergent and discriminant validity of the indicators as well as the composite reliability for all indicators.

4.1.1. Convergent Validity

The convergent validity of the measurement model using reflective indicators is assessed based on the loading factor of the indicators that measure the construct. Where individual indicators are considered reliable if they have a correlation value > 0.70. However, in scale development research, the value of 0.50 to 0.60 is still acceptable (Ghozali and Latan, 2014: 37). Based on the test results, all indicators for each construct have a factor loading above 0.5 to have good convergent validity.

4.1.2. Discriminant Validity

Based on the test results, the discriminant validity value is greater than 0.50, so the latent variable has become a good comparison for the model. In addition, the value of cross-loading and the Cornell-Larcker criterion for each indicator for each variable concerned is greater than the cross-loading and Cornell-Larcker criterion of other variables, which is greater than 0.50, so it can be stated that the discriminant validity of the data using cross loading and the Cornell-Larcker criterion in this study were declared valid.

4.1.3. Composite Reliability

The results of the reliability test of Cronbach alpha and composite reliability show that the values of all constructs are greater than the minimum limit of Cronbach Alpha (greater than 0.70) and composite reliability (greater than or equal to 0.7). Based on the reliability test using Cronbach Alpha and composite reliability, the parameter values of all constructs are above 0.7. Thus, the reliability test using Cronbach alpha and composite reliability of all constructs has good internal consistency for use in this model test.

4.2. The Results of the Inner Model

Inner model testing is done by looking at the R-square value, a goodness of fit model test. The R-square of the PLS model is evaluated by looking at the R-square predictive relevance for the variable model. R-square measures how well the observed values are produced by the model and the parameter estimates.

4.2.1. The Result of R-Square

Inner model testing is done by looking at the R-square value, the goodness of fit model. The coefficient of determination (R²) is used to assess how much the influence of the endogenous construct is affected by the exogenous construct.
Based on the data presented in Table 1, it can be explained that the R-square value for the M1 variable (perceived risk) is 0.133, which means that this research model is weak or 13.3 percent of BNI's mobile banking perceived risk is influenced by service quality and the remainder is 86.7 percent is influenced by other factors not included in the model. The R-square value for the M2 variable (perceived ease of use) is 0.184, which means this research model is weak or 18.4 percent of perceived ease of use BNI mobile banking is influenced by service quality. The remaining 81.6 percent is influenced by other factors which were not included in the model. The R-square value for the variable Y (use of mobile banking) is 0.477, which means that this research model is moderate or 47.7 percent. The use of mobile banking is influenced by service quality, perceived risk, and perceived ease of use; the remaining 52.3 percent is influenced by other factors not included in the model.

4.2.2. Predictive-Relevance (Q²)

Testing the inner model is carried out by looking at the Q-square value, which is a test for the model's goodness of fit and lack of predictive relevance. If the calculation results show a Q-square value of more than zero, then the model is said to have appropriate predictive value relevance. The calculation of the Q-square value can be seen as follows:

\[
Q^2 = 1 - [(1 - R1^2)(1 - R2^2)(1 - R3^2)]
\]

Based on these calculations, the Q² value obtained is 0.63, so it can be concluded that the model has good predictive relevance. Thus, it can be explained that 63 percent of the variables perceived risk, perceived ease of use and use of mobile banking is influenced by service quality and the remaining 0.5 percent is influenced by other factors not included in the model.

4.3. The Results of the Hypothesis Test (Bootstrapping)

4.3.1. The Results of Direct Effect

Testing the direct effect hypothesis using Partial Least Square (PLS) will show six hypotheses. The hypothesis test aims to determine how much influence the independent variables have on the dependent variable. Significance values can be obtained using the bootstrapping technique developed by Geisser and Stone. The statistical test used to test the hypothesis is the t-test. The alternative hypothesis is accepted if the p-value < α 5%. Table 2. shows the direct effect of bootstrapping on the PLS analysis.

| Hypothesis                      | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|--------------------------------|---------------------|-----------------|----------------------------|-------------------------|----------|
| Service Quality -> The Use of Mobile Banking | 0.322               | 0.304           | 0.147                      | 2.197                   | 0.028    |
| Service Quality -> Perceived Risk | -0.364              | -0.376          | 0.104                      | 3.491                   | 0.001    |
| Service Quality -> Perceived Ease of Use | 0.342               | 0.349           | 0.096                      | 3.577                   | 0.000    |
| Perceived risk -> The Use of Mobile Banking | -0.314              | -0.314          | 0.081                      | 3.884                   | 0.000    |
| Perceived Ease of Use -> The Use of Mobile Banking | 0.279               | 0.287           | 0.093                      | 3.020                   | 0.003    |
| Perceived risk -> Perceived Ease of Use | -0.164              | -0.177          | 0.127                      | 1.292                   | 0.197    |

Source: Primary data processed, 2022
Based on Table 2., the direct effect between variables can be explained as follows:

1. The effect of service quality on the use of mobile banking with an original sample value of 0.322 (positive), a t-statistics value of 2.197 and a p-value of 0.028 indicates that service quality has a positive and significant influence on the use of mobile banking so that H1 in this study is accepted.

2. The effect of service quality on perceived risk with an original sample value of -0.364 (negative), a t-statistics value of 3.491 and a p-value of 0.001 indicates that service quality has a negative and significant effect on perceived risk, so H2 in this study is accepted.

3. The effect of service quality on perceived ease of use with an original sample value of 0.342 (positive), a t-statistics value of 3.577 and a p-value of 0.000 indicates that service quality has a positive and significant influence on perceived ease of use so that H3 in this study was accepted.

4. The effect of perceived risk on the use of mobile banking with an original sample value of -0.314 (negative), a t-statistics value of 3.884 and a p-value of 0.000 indicates that perceived risk has a negative and significant effect on the use of mobile banking so that H4 in this study is accepted.

5. The effect of perceived risk on perceived ease of use with an original sample value of 0.279 (positive), a t-statistics value of 3.020 and a p-value of 0.003 indicates that perceived ease of use has a positive and significant influence on the use of mobile banking so that H5 in this study is accepted.

6. The effect of perceived ease of use on perceived risk with an original sample value of 0.164 (negative), a t-statistics value of 1.292 and a p-value of 0.197 indicates that perceived ease of use has a positive and significant effect on perceived risk so that H6 in this study was rejected.

4.3.2. The Results of Indirect Effect

Examination of the mediating variables in this study will be examined regarding the mediating role of perceived risk and perceived ease of use variables in the indirect effect of service quality on mobile banking use. The examination of the indirect effect in this study can be seen in the explanation of the analysis results in Table 4., as follows.

Table 3. shows the p-value for each variable which can be explained as follows.

- The p-value to test the role of perceived risk in mediating customer quality on mobile banking use is 0.003, which is greater than 0.05. The t-statistic value shows 2.943, which is greater than 1.96. These data indicate that perceived risk can mediate customer quality towards the use of mobile banking.
- The p-value to test the effect of perceived ease of use in mediating service quality on the use of mobile banking is 0.020, which is lower than 0.05. The t-statistic value shows 2.334, which is greater than 1.96. This data indicates that perceived ease of use can mediate the effect of service quality on the use of mobile banking.

4.3.3. Variance Accounted For (VAF)

The next step is to calculate the Variance Accounted For (VAF) with the indirect effect formula divided by the total effect (direct effect plus indirect effect). VAF measures how much the mediating variable can absorb the direct influence that was previously significant from the model without mediation. There are three mediation assessments with this method, namely:

- If the VAF value is greater than 80 percent, it is said to be full mediation
- If the VAF value is in the range of 20 percent to 80 percent, it is said to be partial mediation
- If the VAF value is less than 20 percent, it is said that there is no mediation effect.

Based on the results, the VAF value for the model of the influence of service quality on the use of mobile banking mediated by perceived risk is 24.24 percent, while the VAF value for the model of the influence of service quality on the use of mobile banking mediated by perceived ease of use is by 22.03 percent. Because the VAF values of the two models are in the range of 20 percent to 80 percent, it can be concluded that these two models are partial mediation.

| Service Quality -> Perceived Risk | The Use of Mobile Banking | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|----------------------------------|---------------------------|---------------------|----------------|---------------------------|----------------|----------|
|                                  |                           | 0.114               | 0.115          | 0.039                     | 2.943          | 0.003    |
| Service Quality -> Perceived Ease of Use | The Use of Mobile Banking | 0.096               | 0.099          | 0.041                     | 2.334          | 0.020    |

Source: Primary data processed, 2022
4.4. The Effect of Service Quality on the Use of BNI Mobile Banking

Based on the hypothesis test shows that the p-value is 0.028, which is lower than 0.05. These results indicate that H1 is accepted. This supports the statement of Delgado and Munuera (2001 in Adriani and Warmika, 2019), who argue that when consumers receive better service quality than the costs incurred, they believe they will receive a very good value, where this will increase their loyalty to the service provider. This is evidenced by the results of research conducted by Adriani and Warmika (2019), Wulandari and Marlena (2020), Murwanti and Pratiwi (2017), Sari and Hariyana (2019), and Baskara et al. (2021) which found that service quality had an effect on the intention to reuse/repurchase intention.

4.5. The Effect of Service Quality on Perceived Risk

Based on the hypothesis test shows that the p-value is 0.001, which is lower than 0.05. These results indicate that H2 is accepted. Based on the results of the descriptive analysis, it is revealed that to minimize perceived risk, good service quality needs to be given to consumers so that it does not hinder someone from making a purchase. This means that service quality has a negative and significant effect on perceived risk. The results of this study support Hermawan (2019) in his findings stating that perceived risk has a negative effect on consumer intentions in using mobile commerce. This research is also supported by research from Slam et al. (2018) which states that perceived risk in mobile commerce services has a significant negative effect on the implementation of mobile commerce services.

4.6. The Effect of Service Quality on Perceived Ease of Use

Based on the hypothesis test shows that the p-value is 0.000, which is lower than 0.05. These results indicate that H3 is accepted. Based on the results of the analysis, it is revealed that providing good service to customers regarding instructions and procedures for conducting online transactions, especially in the use of mobile banking, will provide security and convenience for customers when using mobile banking. The results of this study support Rusdi et al. (2018) that, theoretically, perceived ease of use has a significant effect on consumer intentions in using mobile commerce. Astarina, I.G.A., Giantari, I.G.A.K., & Yasa, N. N. K. (2017) shows that trust positively and significantly affects consumer reuse intentions.

4.7. The Effect of Perceived Risk on the Use of BNI Mobile Banking

Based on the hypothesis test shows that the p-value is 0.000, which is lower than 0.05. These results indicate that H4 is accepted. Based on the results of the analysis revealed that the less a person's perception of risk, the more likely the customer will adopt internet banking services. This is supported by research conducted by Henry et al. (2017), Adiputra and Ruslim (2021), and Estella et al. (2019), showing that perceived risk has a negative and significant effect on purchase intention.

4.8. The Effect of Perceived Ease of Use on the Use of BNI Mobile Banking

Based on the hypothesis test shows that the p-value is 0.003, which is lower than 0.05. These results indicate that H5 is accepted. Based on the results of the analysis revealed that someone will continue to use the application if they feel comfortable when using the application. This is supported by the research results of Ashghar and Nurlatifah (2020), Chandra and Santoso (2022), Juliana et al. (2020), Subagio et al. (2018), and Saraswati and Rahyuda (2021), which show that perceived ease of use affects purchase intention. Sawitri, N., & Giantari I. (2020) showed that perceived ease of use has a positive and significant effect on Online Repurchase Intention. Prayudi, I Gede et al. (2020) shows that perceived ease of use positively and significantly affects trust. Kumar et al. (2018) show that increasing ease of use will further increase trust. This research is also supported by research by Chawla et al. (2019), which states that perceived ease of use is a factor that influences trust positively and significantly. Previous research conducted by Akbari et al. (2020), Ventre and Kolbe (2020), and Wang et al. (2021) found that perceived ease of use has a positive and significant effect on trust.

4.9. The Effect of Perceived Risk on Perceived Ease of Use

Based on the hypothesis test shows that the p-value is 0.197, which is higher than 0.05. These results indicate that H6 is rejected, and based on the results of the analysis revealed that the higher a person's perceived risk would not necessarily reduce the user's perceived ease. Previous research conducted by Louis Lawrenzio Simanjuntak and Yoestini (2021) found that Perceived Risk has a significant negative effect on purchasing decisions. Ansyah and Abror (2019) state that risk perception negatively and significantly affects consumer attitudes. Research by Albushari (2019) and Sukmana (2018) found that perceived risk has a negative effect on consumer attitude. High perceived risk will also affect high consumer attitudes because perceived risk creates a feeling of worry about the product to be provided, a sense of insecurity about the data provided, and other negative attitudes.

4.10. The Role of Perceived Risk Mediates the Effect of Service Quality on the Use of BNI Mobile Banking

Based on the hypothesis test shows that the VAF value is 24.24, which is higher than 20% and below 80%. This shows that perceived risk mediates the effect of service quality on the use of BNI mobile banking partially. These results indicate that H7 is accepted. Based on the analysis results, it is revealed that someone who considers good service quality will reduce the perceived risk so that the use of the application will increase. This is supported by the
research of Wu et al. (2014), Chen (2012), Ling et al. (2011), Murwatiningsih et al. (2013) and Martinayanti (2016), which show that the quality of service provided to consumers by online companies is very good, it will influence the purchasing decisions made by these consumers. In addition, with the provision of good service, customer perceptions related to risks in using mobile banking will also influence behavior to reuse mobile banking.

4.11. The Role of Perceived Ease of Use Mediates the Influence of Service Quality on the Use of BNI Mobile Banking

Based on the hypothesis test shows that the VAF value is 22.03, which is higher than 20% and below 80%. This shows that perceived ease of use mediates the effect of service quality on the use of BNI mobile banking partially. These results indicate that H8 is accepted. Based on the results of the analysis, it is revealed that someone who considers the quality of service good will feel that using the application is easier, so the use of the application will increase. This is supported by the research of Pramesthi (2013), Faradila and Soesanto (2016), and Prathama and Sahetapy (2019), which show that the easier a technology is to learn and apply, the higher a person's trust to adopt and use the technology.

5. Conclusion

Based on the results of the research analysis, efforts that can be used by BNI management to improve service quality are always monitoring and paying attention to what kind of service quality customers want. The lowest service quality indicator in this study is BNI mobile banking which provides the best solution to the problems customers face. Hence, BNI needs to increase the provision of solutions to problems using BNI mobile banking. The lowest service quality indicator in this study was that BNI mobile banking provided services as promised, so BNI management could use efforts to improve service quality, namely by improving services according to what was promised and according to customer wishes.

The lowest indicator of using BNI mobile banking in this study is BNI mobile banking as the main choice for online transactions so that the efforts that can be used by BNI management to make the use of BNI mobile banking higher, namely by increasing the quality of BNI mobile banking so that it becomes the main choice online transactions. Subsequent research can add constructs other than perceived risk and perceived ease of use which can mediate the effect of service quality on the use of BNI mobile banking. For example, brand passion is admiration, obsession, and feelings shared by some consumers and then becomes the core of consumer strength and relationships with high-quality brands (Revaldi et al., 2022). The better the quality of the electronic services provided, the higher the brand passion will ultimately create customer loyalty.

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