A Digitalization in Banking Industry: Impact of Interface Design on Customer Loyalty of Mobile Banking in Indonesia

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A B S T R A C T

A R T I C L E   I N F O

This research is a study to analyze the effect of Interface Design on customer loyalty in mobile banking applications in Indonesia. This research methodology uses a questionnaire distribution technique for millennial generation respondents who use mobile banking in Indonesia, using the Likert Scale method, and data processing techniques using the Structural Equation Modeling (SEM) method. This research aims to examine the significant influence of Interface Design on customer loyalty in mobile banking applications in Indonesia. This digital transformation in the banking industry provides benefits for both banks and their customers. Banking digitalization can provide benefits for accelerating customer transactions, avoiding human errors for manual transactions at offline branches, and increasing banks' efficiency because it reduces manual processes in serving customer transactions. For customers, mobile banking applications accelerate transactions, time efficiency without having to come to an offline branch, and flexibility to create transactions. The hypothesis indicates that interface design significantly impacts loyalty customers using mobile banking applications. This research is useful for the banking industry to accommodate a user-friendly interface design to increase the competitive advantage for banks that provide mobile banking applications.

INTRODUCTION

The trend of digitalization in banking transactions is increasing every year. This increase was supported by Bank Indonesia data in statistical information on the Indonesian financial economy, where data on the volume of transactions using national mobile banking increased year on year from 2013 to 2021, namely by 605.79% and the transaction value from 2013 to 2021 increased by 48,627 .970.16%. On a year-on-year basis, the increase in transaction volume through mobile banking was 61.48% with a total transaction volume of 5.53 billion transactions in 2021 compared to 3.43 billion transactions in 2020. From data on the transaction value of mobile banking users in Indonesia, there is an increase of 62.07% with a transaction value in 2021 of Rp. 7,730.86 trillion and in 2020 Rp. 4,770.12 trillion.

Digital transformation in the banking industry provides benefits for both banks and their customers. For banking, banking digitalization can provide benefits for accelerating customer transactions, avoiding human errors for manual transactions at offline branches, and increasing efficiency for banks because it reduces manual processes in customer transactions. For customers, the benefits are felt, among others, for accelerating transactions, time efficiency without having to come to an offline branch, and also flexibility, namely transactions can be made anytime and anywhere.

Banking needs to support customers to be able to transact digitally safely, comfortably, and flexibly, so that transactions can reach beneficiaries on time without the need for customers to visit offline branches, not limited to places and times, one of which is Mobile Banking Application service. Interface design, system quality, security assurance, and service quality are very important factors for customers to be able to increase loyalty.

Based on the presentation of the need for digital banking transformation to increase customer loyalty in mobile banking applications, but customers still feel that there are mobile banking applications that are still not user-friendly in interface design, the authors formulate the research problem as follows:
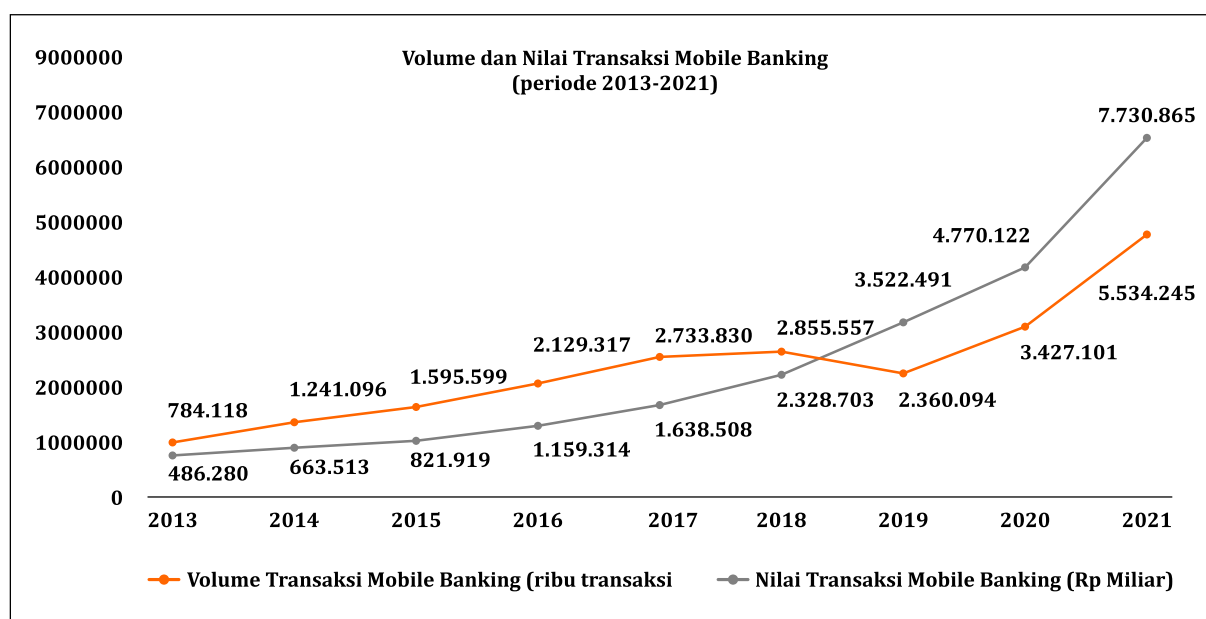

Figure 1. Increase in National Mobile Banking Transactions (2013- 2021).
Source: Bank Indonesia, 2021

1. It is important to know whether Interface Design affects customer loyalty using mobile banking applications.
2. It is important to know whether System Quality affects customer loyalty using mobile banking applications.
3. It is important to know whether Security Assurance affects customer loyalty using mobile banking applications.
4. It is important to know whether Service Quality affects customer loyalty using mobile banking applications.

LITERATURE REVIEW
Mobile Banking

The continuous renewal of services in the banking industry sector has encouraged digital banking services, one of which is mobile banking, which has become a transactional channel that shows competitive advantages between banking entities. The existence of good communication between the Bank and customers is identified in the perceived value. This can stimulate practical and fun experiences that make customers loyal and continue to use the service (Ciunova-Shuleska et al., 2022). The mobile banking application offers a convenient and effective way for customers to manage their accounts and perform various payment transactions. Mobile banking applications have gained popularity in recent years and are widely used by customers (Hanif & Lallie, 2021).

Interface Design

Interface design can make users continue to use the application, application makers need to create an interface design that is easy to use and attractive. However, several problems, such as inconsistent padding and margins, irregular interface design, and high element size variations, often occur in the design of an application (Bessghaier et al., 2022). Interface design hasuses in making designs that prioritize goals to meet the needs of target users (Joshi et al., 2023).

The desire and interest of a user in an application are determined of them by an attractive interface design, otherwise, if the interface design of an application has more stages in search it indicates the user's indecision in thinking and making a decision, for example in conditions when the application user does not find the information needed. More searches indicate more difficulties for app users. Users will find it difficult to make decisions if the information in the interface design is confusing. This shows that the ease of using the application cannot be ignored to make users continue to use the application (He et al., 2023).

Security Assurance

Banks can take several steps to lower perceptions of security risk, for example, improve the security of their systems, provide increased security assurance, and provide better training and information to users. All of these steps can be accomplished by providing more informative visuals backed up by explanations that provide assurance and reasons. Security is one of the four main factors alongside cloud services, e-learning, and quality of service. Besides ease of use felt by customers, security guarantees are a determining factor for the use of mobile banking application services. Customers will be motivated to use the mobile banking application if they feel secure when making transactions (Hanif & Lallie, 2021).

Innovative technologies have accelerated the way banking services are offered, so consumers are being swept along with this trend. Security/ privacy risk is the possibility of loss due to fraud or hackers interfering with the security of a mobile banking application. Quality of service, web design and content, security, and privacy, convenience and speed wherein web design and content, convenience, and speed are the main factors influencing customer satisfaction in internet banking. Trust is a factor influencing the user's desire to engage in mobile banking

and personal sensitive transactions Information (Aboobucker & Bao, 2018).

Service Quality

Service Quality of service is influenced by important factors, namely convenience, assurance, flexibility, efficiency, reliability, privacy, and security. Changes in service quality from time to time are dynamic characteristics of service quality (Zuo et al., 2022). When consumers choose to use a service, consumers judge their perception of service quality by their perception of the cost of involvement with the service provider. For a service provider, it is important to understand the things that affect Loyalty, so it is necessary to provide additional resources to improve Service Quality. To encourage consumer loyalty, providing good service quality is very effective compared to always providing competitive prices (Carter et al., 2023).

Aspects of Service Quality and the value of service affect satisfaction and consumer behavior intentions. Empathy and the existence of good service guarantees have a significant influence on customer satisfaction. Consumers perceive Service Quality as an important aspect of their satisfaction in using a service. This has a positive impact on consumer behavioral intentions and is useful for service providers for strategies to maintain business (Liu & Chen, 2022).

System Quality

Various applications were created to meet consumer demands in ensuring smooth transactions regardless of location or time. The main dimensions for measuring system quality are easy-to-use applications, convenient access, acceptable response time, security and stable function, and attractive design. System Quality is easy to use, usable, quickly navigated, reliable, customizable, and responsive in a timely manner. The better the System Quality, the more likely it is to be used by consumers in their routine activities. System quality includes an attractive interface

design so that it can attract more users to use the service. Mobile application designers must consider appropriate color schemes and designs to be applied to the interface design of an application (Ghani, 2022).

Loyalty

Loyalty is a repetitive pattern of buying behavior that involves conscious consumer decisions to use the same service continuously. Loyalty also shows a purchase commitment by consumers for a service. If consumers are faced with two service choices, consumers will choose the service that is frequently used and make purchases of these services (Solomon, 2018). For companies that are successful in creating value felt by consumers and building consumer loyalty, consumers who demand price reductions are unlikely to appear. A strongly differentiated position also reduces the threat of substitutes by competitors, because the unique features of the product have been made to appeal to consumer preferences thereby making them remain loyal to the product. This can foster consumer loyalty who repeatedly uses these products (Rothaermel, 2021).

For service providers, a very important issue is understanding how to maintain consumer attachment and loyalty. Providing service quality that measures complementary resources provided by service providers becomes a necessary catalyst for consumer loyalty (Zhu et al., 2022). Emotional and rational consumer experiences play a key role in generating satisfaction and engagement with service providers, therefore, businesses must know that their actions in this regard will indirectly impact consumer loyalty. Aspects of the customer experience generate benefits for the company, such as repurchase intention, willingness to recommend services to others, and refusal to switch to competitors, which are components of customer loyalty (Cuesta-Valiño et al., 2023).

Behavioral loyalty is defined as repeated purchase of a brand by a customer, and a consumer's commitment to continue buying or returning to a preferred brand. Behavioral loyalty is the consumer's willingness to maintain a positive and ongoing relationship with a brand because of its perceived good reputation, as evidenced by repeated purchases of the brand's products. Brand loyalty occurs when consumers are psychologically vulnerable to a brand and develop an attitudinal preference and commitment to that brand. The emotional bond that is created between the consumer and the company is considered a source of competitiveness and important for the success of the company (Zhang et al., 2023).

RESEARCH METHOD

Research Method Design

The analysis in this study intends to analyze the influence of Interface Design on the loyalty of customers who use mobile banking applications in Indonesia. The analytical methodology is carried out using quantitative techniques through surveys. Distribution of questionnaires collected from mobile banking customers and analyzed based on the structural equation model. The results of research using the SEM method directly or non-directly review the significant influence of Interface Design, System Quality, Service Quality, and Security assurance on customer loyalty in mobile banking applications.

Data collection

The approach used in this analysis is a quantitative analysis. Quantitative data is in the form of numbers that can be collected through structured questions (Sekaran, 2020). A survey was conducted in this study targeting mobile banking service users in Indonesia. The distribution of questionnaires was carried out targeting 250 respondents millennial generations (age 24-39 years), having mobile banking, a minimum once a month for transactions, and a minimum of 1 (one) year as a customer in a bank. Online survey

questionnaire created with a web link. The survey includes research background, significance, and research objectives, as 25 factors proposed to evaluate the relationship between constructs, and participant demographics. To evaluate the importance of each indicator, a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) was applied. Variable operationalization can be seen in Appendix 1, Table 3.1. The survey was conducted from March to April 2023. During the survey, a questionnaire web link was purposively sent to mobile banking users via message.

Conceptual model and research hypotheses
Data Analysis Method
The methodology for conducting a data review in this study is quantitative. The quantitative analysis makes an appropriate assessment of an object of research. In business analysis, a quantitative approach can evaluate consumer characteristics, views, opinions, and actions. The techniques used can provide answers to problems, namely how much, how often, how much, when, and who. Distributing questionnaires through surveys is one of the most widely used quantitative research methodologies (Cooper & Schindler, 2011).

The analysis is obtained from the results of the answers to the survey distributed to customers who use cooperative Internet banking services from the purposive sampling method. Data analysis in this analysis uses the Structural Equation Modeling (SEM) methodology. SEM is a collection of statistical methods used to predict the relationship between constructs and indicators, taking into account measurement errors that might occur (Hair et. Al, 2021). SEM is also a statistical modeling methodology that analyzes factors, path analysis, and regression. SEM is a widely used multivariate study method and has the benefit of including specific versions of a number of other analytical methods. SEM is a statistical method that is useful for creating

and evaluating statistical models in the form of causality models. The results of research using the SEM method directly or non-directly review the significant influence of Interface Design, System Quality, Service Quality, and Security assurance on customer loyalty in mobile banking applications.

Research hypotheses

The following is a research methodology design scheme that will be used:

Based on the following hypotheses, Fig. 3.1. presents the theoretical model with the hypotheses.

Research that has been done before also supports the research hypothesis in this study. Research conducted by He et al (2023) stated that the ease of using the application can make users continue to use the application, in this case, it can increase customer loyalty. According to research conducted by Bessghaier et al (2022) states that interface design can increase customer loyalty and keep customers using the application, so application makers need to create an interface design that is easy to use and attractive.

Research conducted by Salamah et al (2022) stated Service Quality is an important topic resulting from the growth of electronic services. The appearance of the application is the main feature that attracts consumers, with interface design as the first attribute that catches

consumers' attention. Consumers are looking for features, services, and easy access to an app's content. Interface design is a real feature of a service that makes consumers interested and can build consumer confidence in using an application.

Research conducted by (Ghani, 2022) stated Various applications were created to meet consumer demands in ensuring smooth transactions regardless of location or time. The main dimensions for measuring system quality are easy-to-use applications, convenient access, acceptable response time, security and stable function, and attractive design.

Based on the explanation above, in this study, the researcher formulated the following hypothesis:

H1: Interface Design affects System Quality in mobile banking applications significantly and positively.

H2: Interface Design affects Security Assurance in mobile banking applications significantly and positively.

H3: Interface Design affects Service Quality in mobile banking applications significantly and positively.

Service Quality of service is influenced by important factors, namely convenience, assurance, flexibility, efficiency, reliability, privacy, and security. Changes in service quality from time to time are dynamic characteristics of service quality
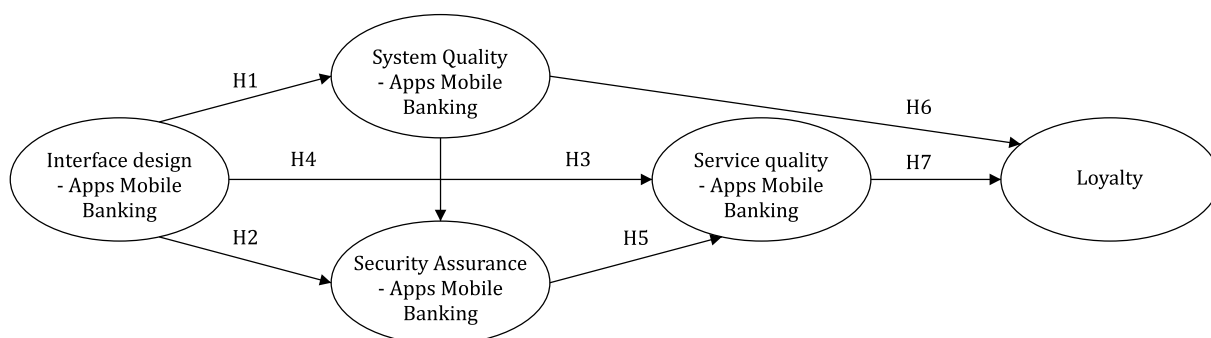

Figure 3.1. Research Methodology Design
Source: Zhou, et. Al, 2020

(Zuo et al., 2022). Mobile Banking's Security assurance is one of the four main factors alongside cloud services, e-learning, and quality of service. Besides ease of use felt by customers, security guarantees are a determining factor for the use of mobile banking application services. Security assurance is so important, Customers will be motivated to use the mobile banking application if they feel secure when making transactions (Hanif & Lallie, 2021).

Based on the explanation above, in this study the researcher formulated the following hypothesis:

H4: *System Quality affects Security Assurance* in mobile banking applications significantly and positively.

H5: Security Assurance affects Service Quality in mobile banking applications significantly and positively.

Research conducted by (Ghani, 2022) stated System Quality is easy to use, usable, quickly navigated, reliable, customizable, and responsive in a timely manner. The better the System Quality, the more likely it is to be used by consumers in their routine activities. System quality includes an attractive interface design so that it can attract more users to use the service. Mobile application designers must consider appropriate color schemes and designs to be applied to the interface design of an application.

Research conducted by (Carter et al., 2023) stated when consumers choose to use a service, consumers judge their perception of service quality by their perception of the cost of involvement with the service provider. For a service provider, it is important to understand the things that affect Loyalty, so it is necessary to provide additional resources to improve Service Quality. To encourage consumer loyalty, providing good service quality is very effective compared to always providing competitive prices.

Based on the explanation above, in this study, the

researcher formulated the following hypothesis:

H6: *Service Quality* affects *Loyalty* in mobile banking applications significantly and positively.

H7: *System Quality* affects *Loyalty* in mobile banking applications significantly and positively.

RESULT AND DISCUSSION
Respondent Profile
The target respondents who were sampled in this study were 250 respondents. Respondents in this study are millennials (age 24-39 years), who already have mobile banking, at least once a month for transactions, minimum 1 (one) year as banking customers. To ensure that the respondent is a mobile banking user and transacts at least once a month, a question is created which is a filtering question where if the respondent does not yet have mobile banking and does not make transactions via mobile banking at least once a month, the respondent's data will not be recorded.

Researchers use the Google Form application tool which is distributed to respondents. The researcher distributed the questionnaire in several ways, including distributing the questionnaire form link through the messaging application and also distributing it via social media.

There were 250 respondents who met the criteria, namely mobile banking users, and millennials who made transactions via mobile banking. The demographics of the respondents discussed in this section, among others, are based on gender, age, the most frequently used mobile banking application, and the frequency of transactions using mobile banking.

Outer Model Test Results
Outer Model testing is carried out to ensure that the measurement scale used is valid and reliable for use in research. The outer model displays the

Table 4.1. Respondent Profile

Profile	Category	Frequency	Percentage
Gender	Male	115	46.00%
	Female	135	54.00%
Age	24 - 29 years old	98	39,20%
	30 - 34 years old	68	27,20%
	35 - 39 years old	84	33,60%
Work	BUMN employees	154	61,60%
	Private employees	69	27,60%
	Housewife	8	3,20%
	Government employees	7	2,80%
	Self employed	7	2,80%
	Other	5	2,00%
Education	Diploma	18	7,20%
	Bachelor	192	76,80%
	Post Graduate	40	16,00%
Use Mobile Banking	< 1 year	5	2,00%
	> 2 years	229	91,60%
	1-2 years	16	6,40%
Reasons for Using the Mobile Banking Application	Complete features for various transaction needs	169	67,60%
	User friendly	55	22,00%
	Ease of online transactions	16	6,40%
	Attractive appearance (nice application design)	1	0,40%
	Reliable system	6	2,40%
	Promotion	3	1,20%
Mobile Banking Usage Frequency	> 8 transactions per month	157	62,80%
	1 – 4 transactions per month	53	21,20%
	5-8 transactions per month	40	16,00%

relationship between constructs and indicator variables (hair, et al. 2021). As for the outer model analysis, it can be seen from the parameters of convergent validity, discriminant validity, and internal reliability.

Convergent Validity

Convergent validity is a measure of how far a convergent construct can explain the variance of its indicators. The metric used to evaluate Convergent validity is the Average Variance Extracted (AVE) or the average variance extracted for all indicators in each construct.

Table 4.2.1. Convergent Validity Result

Construct Variable	Indicator		Loading Factor	AVE
Interface Design	1	INT1	0,677	0,641
	2	INT2	0,875	
	3	INT3	0,835	
System Quality	1	SYS1	0,833	0,699
	2	SYS2	0,798	
	3	SYS3	0,865	
	4	SYS4	0,846	
Security Assurance	1	SEC1	0,824	0,800
	2	SEC2	0,930	
	3	SEC3	0,924	

Service Quality	1	SER1	0,693	0,500
	2	SER2	0,625	
	3	SER3	0,743	
	4	SER4	0,742	
	5	SER5	0,658	
	6	SER6	0,711	
	7	SER7	0,686	
	8	SER8	0,691	
	9	SER9	0,796	
	10	SER10	0,738	
	11	SER11	0,682	
Loyalty	1	LOY1	0,892	0,753
	2	LOY2	0,890	
	3	LOY3	0,876	
	4	LOY4	0,809	

Based on Table 4.2.1, From this, it can be concluded that the existing question indicators can be positively correlated in measuring the same variable so that the indicator is declared valid.

Discriminant Validity

Discriminant validity is a parameter used to measure the range of a construct that is empirically different from other constructs in the structure of a model (Hair, et al, 2021).

Table 4.2.2. Discriminant Validity Test Result

	INT	LOY	SEC	SER	SYS
INT	0.801				
LOY	0.548	0.868			
SEC	0.500	0.580	0.894		
SER	0.604	0.740	0.624	0.707	
SYS	0.634	0.556	0.542	0.629	0.836

Based on Table 4.2.2 above it can be concluded that the variables in this study already have appropriate discriminant validity, namely the value of the mutual variance between each construct is higher than the mutual variance between one construct and the other constructs in the model. This shows that the research variables have differences from each other and are declared valid for use in measurement.

Internal Reliability

Internal reliability is the extent to which indicators can measure the same construct in relation to one another. Internal reliability can be measured using composite reliability (CR). Composite reliability is one of the measurements used to measure internal reliability. The Composite reliability value which is considered good is more than 0.7 (Hair, et al, 2021).

Table 4.2.3. Internal Reliability Test Result

Construct Variable		Indicator	CR
Interface Design	1	INT1	0,841
	2	INT2	
	3	INT3	
System Quality	1	SYS1	0,903
	2	SYS2	
	3	SYS3	
	4	SYS4	
Security Assurance	1	SEC1	0,923
	2	SEC2	
	3	SEC3	
Service Quality	1	SER1	0,916
	2	SER2	
	3	SER3	
	4	SER4	
	5	SER5	
	6	SER6	
	7	SER7	
	8	SER8	
	9	SER9	
	10	SER10	
	11	SER11	
Loyalty	1	LOY1	0,924
	2	LOY2	
	3	LOY3	
	4	LOY4	

Based on Table 4.2.3. above, it is obtained that the Composite Reliability value for all operational variable constructs is at a value of more than 0.7, so that it can be concluded that all of these variables are reliable and the scale used as a measurement can provide consistent results when repeated measurements are carried out.

Hypothesis Test Results

Testing the hypothesis in this study using the t-test and p-value, where if the value of the t-test is greater than the t-table with a p-value ≤ 0.05, it can be concluded that the hypothesis is acceptable and has a significant positive effect.

The following are the results of testing each hypothesis in this study

Path Analysis

Path Analysis is an analysis that is used to determine direct and indirect relationships. Path Analysis presents causal relationships between variables in the form of images to make it easier to read. This description is done to explain the relationship that occurs both the dependent and independent variables or other relationships with the moderating variable. Path analysis is an analysis that includes causal modeling, covariance structure analysis, and latent variable models. Path analysis can also be seen as an extension of the regression model (Malhotra, 2010).

Table 4.3.1. Hypothesis Test Results

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistik (|0/STDEV|)	P Values
Interface Design → Security Assurance	0.262	0.262	0.078	3.354	0.000
Interface Design → Service Quality	0.391	0.393	0.051	7.637	0.000
Interface Design → System Quality	0.634	0.634	0.040	15.699	0.000
Security Assurance → Service Quality	0.428	0.429	0.052	8.288	0.000
Service Quality → Loyalty	0.646	0.654	0.072	8.942	0.000
System Quality → Loyalty	0.148	0.142	0.081	1.827	0.034
System Quality → Security Assurance	0.376	0.379	0.074	5.055	0.000

Table 4.3.2. Tabel Hypothesis

| Hypothesis	T- Statistik (|0/STDEV|)	P-Values	Kesimpulan
Interface Design → Security Assurance	3.354	0.000	hypothesis is accepted
Interface Design → Service Quality	7.637	0.000	hypothesis is accepted
Interface Design → System Quality	15.699	0.000	hypothesis is accepted
Security Assurance → Service Quality	8.288	0.000	hypothesis is accepted
Service Quality → Loyalty	8.942	0.000	hypothesis is accepted
System Quality → Loyalty	1.827	0.034	hypothesis is accepted
System Quality → Security Assurance	5.055	0.000	hypothesis is accepted
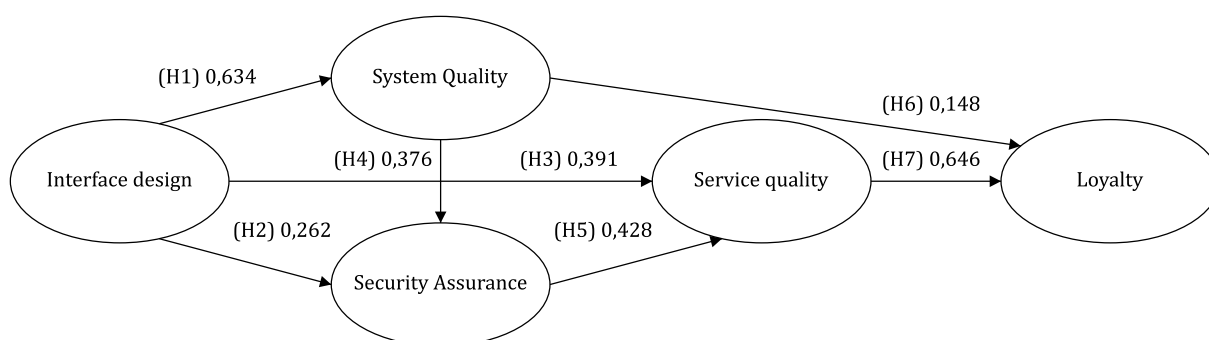
Figure 4.4. Path Analysis Research Model

Based on Figure 4.4, it can be stated that the service quality coefficient affects Loyalty of 0.646. Furthermore, interface design affects system quality by 0.634. The system quality variable is the variable that least influences loyalty, which has a coefficient of 0.148.

CONCLUSION

Conclusion

This study aims to determine the factors that influence loyalty (Loyalty) to the use of mobile banking applications for the millennial generation through a research model using PLS SEM with various measurement indicators of research variables. The factors analyzed in this study are Interface Design, System Quality, Security Assurance, and Service Quality.

After analyzing and discussing the variables and indicator questions contained in this research questionnaire, the conclusions that can be drawn from this study are:

1. Interface Design significantly and positively influences System Quality in mobile banking applications. This statement is in accordance with research conducted by Ghani (2022), which states that Interface Design has a significant positive influence on System Quality, which means that interface designs that are easy to use and attractive to users have a tendency to improve System Quality of mobile banking applications.

2. Interface Design significantly and positively influences Security Assurance in mobile banking applications. This means that an informative and safe interface design for users has a tendency to increase the Security Assurance of mobile banking applications. There is a significant relationship between interface design and security assurance. Banks can carry out strategies to increase security assurance by providing more informative visuals supported by explanations that provide certainty and reasons (Hanif & Lallie, 2021).

3. Interface Design influences Service Quality in mobile banking applications significantly and positively. This means that an interface design that is easy to use and attractive to users has a tendency to improve the Service Quality of the mobile banking application. Previous research conducted by Salamah et al (2022) stated that Interface design is a real feature of a service that makes consumers interested and can build consumer confidence in using an application.

4. \System Quality significantly and positively influences Security Assurance on mobile banking applications. This shows that the existence of a reliable system that can guarantee the security of transactions, it will increase Security Assurance for its users. Users feel that the ability of a mobile banking application that is more reliable and has good functionality will also increase the Security Assurance of the mobile banking application from its users (Ghani, 2022).

5. Security Assurance has a significant positive effect on Service Quality, which means that a mobile banking application that has good security guarantees has a tendency to improve service quality (Service Quality) from a mobile banking application. In a previous study conducted by Zuo et al (2022) it was stated that the Service Quality of a service is influenced by important factors, namely convenience, security assurance, flexibility, efficiency, reliability, privacy, and security.

6. Service Quality has a significant positive effect on the loyalty of mobile banking application users, which means that a mobile banking application that has good service quality has a tendency to increase loyalty to mobile banking application users. In research conducted by Liu & Chen (2022) stated that aspects of Service Quality and the value of a service affect satisfaction and consumer behavioral intentions as a whole. The existence of good service quality has a significant influence on customer satisfaction.

7. System Quality affects Loyalty in mobile banking applications significantly and positively. This means that a mobile banking application that has a good quality system has a tendency to increase loyalty to mobile banking application users. In a study conducted by Zhang et al. (2023), stated that service excellence can create a strong relationship between customers, service providers, and loyalty and cause customers to cognitively and emotionally show attachment to a service, thereby forming customer loyalty.

Managerial Implication

Based on the results of this study, the researcher can provide some practical managerial-related suggestions for companies providing mobile banking services, namely:

1. For mobile banking application service providers:
   a. Completeness of features that can accommodate customer needs is important to obtain higher customer loyalty. This is because in using mobile banking, customers no longer need to come to the branch, so various needs that previously could be done through branches are needed to be done through mobile banking as a substitute for conventional services or services through branches.
   a. Based on Path Analysis, Service Quality is a variable that has a very close correlation with Loyalty (a coefficient value of 0.646 is the highest compared to other variables. Service Quality of service is influenced by important factors, namely convenience, assurance, flexibility, efficiency, reliability, privacy, and security. Changes in service quality from time to time are dynamic characteristics of service quality Zuo et al (2022). For customers, the convenience, reliability, and security of transactions

provided by mobile banking application service providers are crucial to the level of customer loyalty. This is an opportunity for mobile banking service providers to pay attention to the services provided to customers, including customer service that has good product knowledge, a reliable system and there are rarely system errors, and the ease of making transactions through mobile banking.

   a. The millennial generation, which is a generation that easily adapts to digitalization, is a potential that mobile banking service providers really need to pay attention to. Mobile banking service providers can make various efforts to approach market penetration, so that the millennial generation makes mobile banking a part of their daily lives. This can make mobile banking services continuously used by customers.

2. For Government Institutions:
   a. The existence of banking digital transformation, nationally can change customer behavior in financial transactions. This makes the government, especially regulators, always follow trends in public transactions so that they can always know in detail the features provided by mobile banking service providers. The government needs to set national standards so that mobile banking applications provided by service providers comply with transaction security standards, support Anti Money Laundering, and comply with regulations set by regulators.
   a. The government needs to provide routine and comprehensive data related to banking transactions nationally to assist stakeholders in reading society's transactional trends.
   a. The government needs to support automation that remains safe in banking digitization, such as the need for

standardization in the application of anti-skimming technology, as well as anti-social engineering that needs to be

met by mobile banking application service providers.

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Table 3.1. Variable Operationalization

No	Variable	Definition	Indicator	Refrerence	Scale
1	Interface Design (INT)	Interface design is an interface design for applications that focuses on the user interaction experience. Interface design can make users continue to use applications, application makers need to create interface designs that are easy to use and attractive (Bessghaier et al., 2022).	Ease of use (INT 1)	(Bessghaier et al., 2022).	Likert Scale : 1-5
2			Interface Design (INT 2)		Likert Scale : 1-5
3			Navigation Design (INT 3)		Likert Scale : 1-5
4	System quality (SYS)	System quality is a measure of an information system in the interaction between the user and the system which refers to how well the capabilities of the hardware, software, policies, procedures of the information system can provide information for user needs (Ghani, 2022).	system stability (SYS 1)	(Ghani, 2022).	Likert Scale : 1-5
5			system response speed (SYS2)		Likert Scale : 1-5
6			Answer Quality Online Customer Service (SYS 3)		Likert Scale : 1-5
7			response SLAs Online Customer Service (SYS 4)		Likert Scale : 1-5
8	Security Assurance (SEC)	Security assurance is a guarantee of security provided by application providers to service users. In addition to the ease of use that can be felt by service users, Security assurance is a determining factor in the use of mobile banking application services. Users of banking services will be motivated to use mobile banking applications if they feel safe when making transactions (Hanif & Lallie, 2021).	high security (SEC 1)	(Hanif & Lallie, 2021).	Likert Scale : 1-5
9			Customers' digital financial activities can be tracked (SEC 2)		Likert Scale : 1-5
10			Confidentiality of transaction data (SEC3)		Likert Scale : 1-5
11	Service Quality (SER)	Service quality is an achievement in an effort to accommodate consumer needs for a service. Service Quality of a service is influenced by important factors, namely convenience, assurance, flexibility, efficiency, reliability, privacy, and security (Zuo et al., 2022)	Mobile banking applications can meet the needs (SER 1)	(Zuo, 2022)	Likert Scale : 1-5
12			transaction satisfaction (SER 2)		Likert Scale : 1-5
13			Loan Services (SER 3)		Likert Scale : 1-5
14			Transaction Inquiry (SER 4)		Likert Scale : 1-5

15	service quality (SER)	Service quality is an achievement in an effort to accommodate consumer needs for a service. Service Quality of a service is influenced by important factors, namely convenience, assurance, flexibility, efficiency, reliability, privacy, and security (Zuo et al., 2022)	Investment Services (SER 5)	(Zuo, 2022)	Likert Scale : 1-5
16			Credit card service (SER 6)		Likert Scale : 1-5
17			Various services (custom) (SER 7)		Likert Scale : 1-5
18			Service price (SER 8)		Likert Scale : 1-5
19			Deposit service Withdraw cash without a card via a machine / ATM / CRM (SER 9)		Likert Scale : 1-5 / Likert Scale : 1-5
20			e-registration of offline branch services (SER 10)		Likert Scale : 1-5
21			Online account registration service (SER 11)		Likert Scale : 1-5
22	Loyalty (LOY)	Loyalty is a repetitive pattern of buying behavior that involves conscious consumer decisions to use the same service continuously. Loyalty also shows a purchase commitment by consumers for a service. If consumers are faced with two service choices, consumers will choose the service that is frequently used and make purchases of these services (Solomon, 2018).	Service innovation (LOY 1)	Solomon, 2018	Likert Scale : 1-5
23			Willingness to Use the Service (LOY 2)		Likert Scale : 1-5
24			Recommendations for other consumers (LOY 3)		Likert Scale : 1-5
25			Coordination of mobile banking and offline banking services (LOY 4)		Likert Scale : 1-5