

ANALYSIS OF THE EFFECT OF SYSTEM QUALITY, INFORMATION QUALITY, AND SERVICE QUALITY ON USER SATISFACTION OF T24 APPLICATION (TEMENOS TRANSACT CORE BANKING) WITH PERCEIVED USEFULNESS AS AN INTERVENING VARIABLE (CASE STUDY: J TRUST BANK INDONESIA)



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Abstract

This study aims to analyze the effect of system quality, information quality, and service quality on user satisfaction of the T24 application (Temenos Transact Core Banking) with perceived usefulness as an intervening variable, with a case study at J Trust Bank Indonesia. The research sample consisted of 113 respondents who were users of the T24 application. The analysis method used was Structural Equation Modeling-Partial Least Squares (SEM-PLS). The results showed that information quality did not have a significant effect on user satisfaction and perceived usefulness. Service quality had a significant effect on user satisfaction and perceived usefulness, with influence coefficients of 0.430 and 0.448, respectively. In addition, system quality had a significant effect on perceived usefulness (0.353), but did not have a direct effect on user satisfaction. Perceived usefulness was shown to have a significant effect on user satisfaction (0.268). The mediation relationship through perceived usefulness on user satisfaction shows that information quality, service quality and system quality do not have a significant effect with each P-Value of (0.428), (0.066) and (0.065). This study reveals the importance of service quality as a major factor in increasing user satisfaction with the support of system quality to strengthen the perception of the benefits of using the T24 application.

Keywords: System Quality, Information Quality, Service Quality, User Satisfaction, Perceived Usefulness, T24

INTRODUCTION

Core Banking System (CBS) is an information technology infrastructure used by banking institutions to manage the bank's main activities, such as customer data processing, financial transaction processing, banking product management, and service provision through various channels. This system allows bank operations to be carried out centrally, automatically, and in real-time, both for services at branch offices, ATMs, and digital platforms such as mobile banking and internet banking.

J Trust Bank Indonesia is a commercial banking institution that has been operating since 2015 under the ownership of J Trust Co., Ltd., a Japan-based company engaged in the financial, banking, and investment sectors. As part of the J Trust group, this bank is committed to providing innovative banking services that are oriented to customer needs. J Trust Bank Indonesia previously used Core Banking Finacle to support its various operational needs. However, over time, a number of problems began to emerge in Core Banking Finacle that hampered the efficiency and quality of service. This problem finally prompted a strategic decision to replace the Core Banking system using T24 (Temenos Transact Core Banking). The hope is that the replacement can overcome the limitations of the old system by increasing operational efficiency, as well as supporting faster, more stable, and more reliable digital services. Previously, when using Core Banking Finacle, there were several operational problems that affected stability and service. The following are some of the events that occurred and became the basis for consideration for replacing the core banking system.

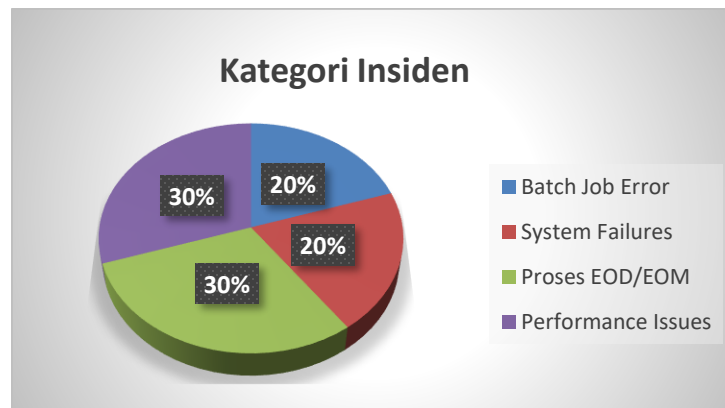


Figure 1.
Finacle Incident Categories

Figure 1. shows the Incident Categories in the Finacle core banking system as follows:

EOM/EOD Process (30%):

- This category includes an incident on September 1, 2020, where the Loan Restructuring Process was carried out at the end of the month, causing the EOM (End of Month) process to be delayed because there was a business need to run the Loan Restructuring process. The EOD (End of Day) process for August 31, 2020 could only be started at 23:00, after the Loan Restructuring was completed, due to the absence of a priority mechanism in job scheduling, so that the long business process could hamper the execution of EOD/EOM.

- This category includes an incident on November 1, 2022, where the Oracle Sequence Number (Database) has reached its maximum limit (100,000), causing the system to be unable to generate new IDs for transactions in the EOD (End of Day) process.
- This category includes an incident on January 6, 2022, where the User ID required to run the EOD (End of Day) process at Finacle Treasury (FINTR) was inactive because there was no automation mechanism to detect inactive accounts before the EOD process was running.

Performance Issues (30%):

- This category includes incidents on September 1, 2020 that caused Internet Banking (IBMB) and ATM services to become very slow or temporarily stopped. This was due to high CPU and memory performance, so that the server could not handle transaction requests quickly and the lack of a load balancing mechanism that regulates the distribution of server loads optimally.
- This category includes an incident on September 1, 2020 that caused the Server to slow down due to too many jobs running simultaneously, increasing the BOD (Begin of Day) processing time. So that customer transactions that depend on BOD (Begin of Day), such as updated balances, are delayed.
- This category includes an incident on September 29, 2023 that caused a 0 balance display in the IB/MB application and a spike in complaints to customer service. This was due to the increase in the number of jobs sent from the Backend to the Database causing database job overload and resulting in a database crash.

Batch Job Error (20%):

- This category includes an incident on September 1, 2020, a Fatal Error occurred in Batch Job, which caused the interest calculation process on one account at the branch office to fail.
- This category includes an incident on November 1, 2022, a fatal error occurred in the Batch Job, which was related to the calculation of interest for the KPR (Home Ownership Credit) Loan account.

System Failure (20%):

- This category includes incidents on 30-May-2022, The archive log directory was full causing customers to be unable to access digital services, either via ATM or internet banking.
- This category includes incidents on 20-December-2022, Storage media failure (hard disk failure) on the backend server caused a delay in the EOD (End of Day) process.

From the incident categories, it can be concluded that the main problems are related to the EOM/EOD Process and Performance Issues, which are the main drivers of the need for a new core banking system, which currently J Trust Bank Indonesia has used T24 (Temenos Transact Core Banking).

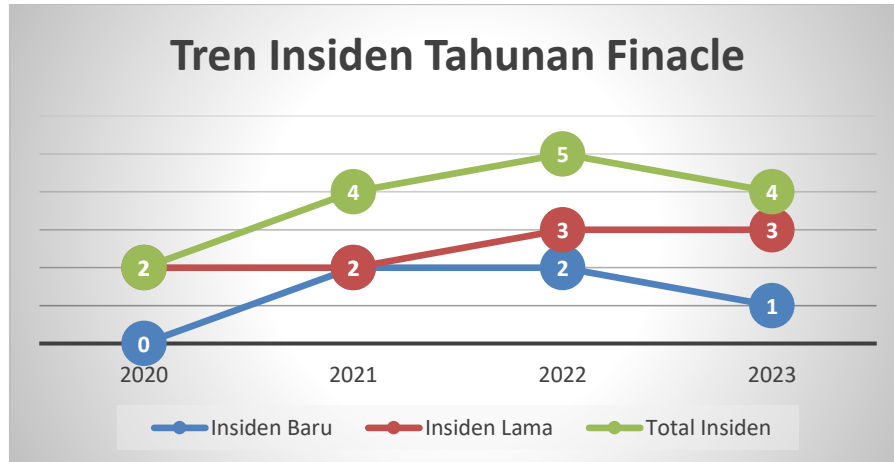


Figure 2.
Finacle Incident Trends Per Year

Figure 2 shows the number of incidents each year from 2020 to 2023, and the following is an explanation of the incident trends:

- **Year 2020:** There are 2 old incidents that have not been resolved. This is a legacy from the period before 2020 where most of them are related to Delays in the EOM/EOD process due to business needs for the process (Loan Restructuring) and memory bottleneck issues.
- **Year 2021:** Total Incidents increased to (4 incidents), with contributions from 2 new incidents and 2 old incidents. New incidents indicate a problem in the BOD (Begin of Day) process that impacts IBMB and ATM
- **Year 2022:** Total incidents became higher (5 incidents), with contributions from 2 new incidents and 3 old incidents. Old incidents increased to 3 incidents, indicating that some problems from the previous year continued to pile up and could not be resolved. New incidents remained at 2 incidents, indicating a stagnant trend without a decrease or increase with the presence of slow response incidents on the EOD server and a full Archive log Directory disruption.
- **Year 2023:** Total incidents decreased to (4 incidents), with contributions from 1 new incident and 3 old incidents. Although the total incidents decreased, old incidents remained stable at 3, indicating no significant resolution to previous incidents and there was a new incident, namely a database crash (September 29, 2023), which had a major impact on operations and customer service. 2023 was a year with many recurring systemic problems.

Although the number of incidents decreased in 2023, the quality of incidents was still quite significant with a major impact on operations and customer service. Based on these incidents, J Trust Bank Indonesia replaced the new core banking system, namely T24 (Temenos Transact Core Banking) with the hope that this system can be a strong foundation to meet operational expectations and provide maximum satisfaction to users, both internal (operational staff) and external (customers). However, the success of implementing technology such as T24 (Temenos Transact Core Banking) depends not only on the availability of the system, but also on the quality of the system, the quality of information,

and the quality of the services provided. These factors directly affect the user's view of perceived usefulness.

Perceived usefulness reflects how far users consider that the T24 Application (Temenos Transact Core Banking) can improve productivity, work efficiency, and ease of decision making. Thus, this thesis research is expected to provide strategic evaluation and recommendations to improve system efficiency, information relevance, and service support in order to strengthen user satisfaction and bank competitiveness in the future.

REVIEW OF LITERATURE

Researchers adopted Perceived Usefulness from the Technology Acceptance Model (TAM) method. This theory was first introduced by Fred Davis in 1986, which is one of the models built to analyze and understand the factors that influence the acceptance of computer technology. Then this theory was further developed by several researchers such as Adam et.al. (1992), Szajna (1994), Igbaria et. Al. (1995), Venkatesh & Morris (2000), Venkates & Davis (2000), and Sanjaya (2005). In the revised TAM theory by Fred Davis et al. (1989) define the perception of usefulness (Perceived Usefulness) as "a level at which a person believes that using the system can improve his/her performance at work". The next development of TAM was modified again in 2008, which was named TAM 3.

In the latest development of TAM 3, a new dimension is added to Perceived Ease of Use. The development of TAM aims to form basic assumptions that are able to predict and explain behaviors that drive the use of technology that continues to develop (Surendran, 2012; Park, 2009; Venkatesh & Bala, 2008; Alomary & Woollard, 2015).

3 factors influence the use of a system as proposed by (Fred Davis, 2000), namely:

1. **Perceived Usefulness** is a level at which a person believes that using the system can improve his or her work performance.
2. **Perceived Ease of Use** is a level at which a person believes that using the system is effortless.
3. **Intention to Use** is a behavioral tendency to use a technology. This study uses Perceived Usefulness as an Intervening Variable, which is defined as an assessment of the existence of a prospective (good expectation) originating from a personal perspective, where using a particular application system will improve the quality of work and quality of life, the belief that using the application will improve his performance, Davis (2000).

Based on research by Aditya (2017) and Hidayat (2018), Perceived Usefulness has a significant positive effect on User Satisfaction.

RESEARCH METHOD

The research method used in this study is a quantitative research method. According to Sugiyono (2017, p. 13) quantitative research methods can be interpreted as research methods based on the philosophy of positivism, used to research certain populations or samples, sampling techniques are generally carried out randomly, data collection uses research instruments, data analysis is quantitative/statistical to test the established hypothesis.

The population in this study amounted to 137 who were users of the T24 application at PT. J Trust Bank Indonesia Tbk. Users of this application include bank employees who use the system for daily operations, who interact with the application through digital banking

services consisting of the Head Office & Branch Operation Division (HOBD), Branch Management and Information Technology Division (ITD), and several divisions involved in transactions.

Table 1
T24 App User Population

No	Division	Amount
1	Branch Management	66
2	Business Linkage & Consumer	2
3	Client Services	1
4	Commercial & SME Banking	3
5	Compliance	2
6	Corporate Banking	2
7	Corporate Funding	4
8	Corporate Legal & Litigation	1
9	Credit & Administration	2
10	Credit Risk Reviewer	2
11	Financial Control	2
12	General Services	1
13	Head Office & Branch Operations	10
14	Human Capital	1
15	Information Technology	21
16	Internal Audit	6
17	Japan & Korea Desk	2
18	Management of All Delinquencies	1
19	President's Office	3
20	Risk Management	2
21	Treasury & Capital Markets	1
22	Planning & Performance	2
	Total	137

Determining the number of samples in this study using the Random Sampling method or random sampling is a sampling technique in which each member of the population has the same opportunity to be selected as a sample. Researchers took 113 samples that had actually filled in. Respondents or samples were taken from T24 Application users, namely from the Branch Management Department as many as 66 people, Information Technology as many as 21 people, Internal Audit as many as 6 people, Head Office & Branch Operation as many as 10 people, Risk Management as many as 2 people, Planning & Performance as many as 2 people, Financial Control as many as 1 person, Compliance as many as 1 person, Business Linkage & Customer as many as 1 person and President Office as many as 3

people. Researchers use the Slovin formula to determine the number of samples to be used in determining the number of samples to be selected with an error rate of 5%.

The data collection methods used were survey methods, literature studies, observations, interviews and questionnaires. Data testing in this study used SmartPLS Version 3.0 software. The Instrument Testing with Measurement Model (Outer Model), Structural Model (Inner Model), Hypothesis Testing, and Path Analysis.

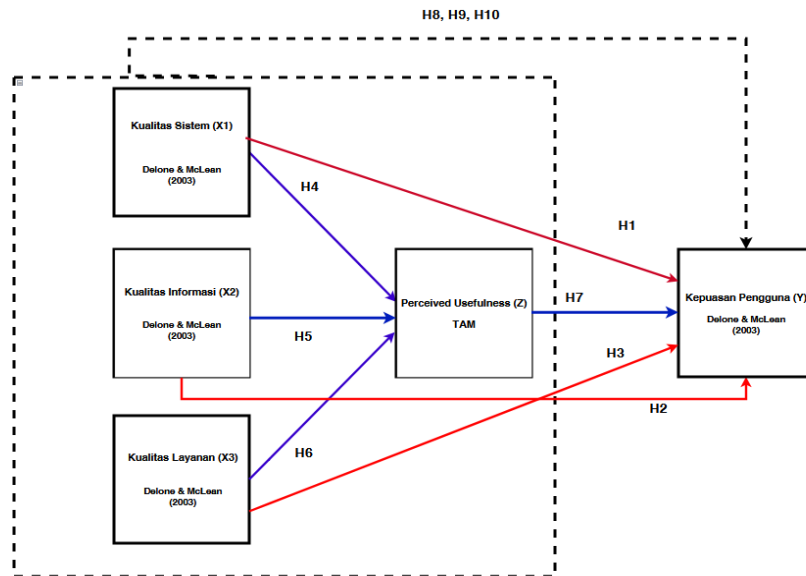


Figure 3.
Research Framework

The framework of thought in this research is presented in the image above:

- X1 : System Quality
- X2 : Information Quality
- X3 : Quality of Service
- Y : User Satisfaction
- Z : Perceived Usefulness

The following steps taken in this research can be seen in the research flow diagram in Figure 3.

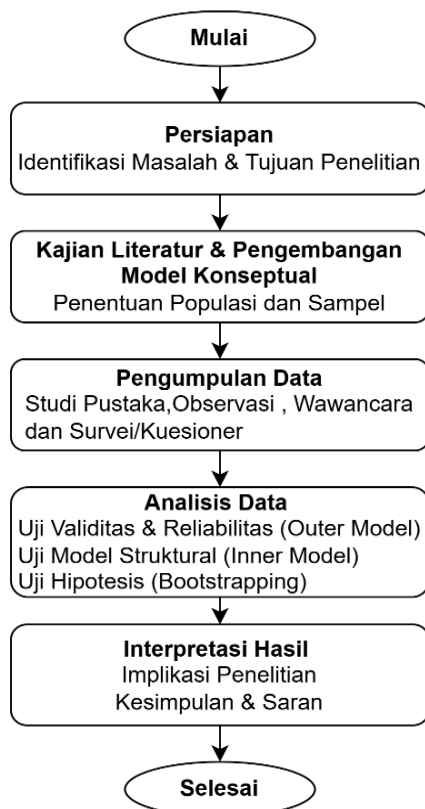


Figure 4.
Research Flow Chart

Operational Research Variables

The operational definitions of each variable and indicator in this study are arranged in the following table:

Table 2.
Operational Variables

Variables	Indicator	Questionnaire Items
System Quality (X1)	1. Ease of Use and Access 2. System Flexibility 3. System Integration 4. Functional Specifications 5. Reliability 6. Responsiveness (Response Time) 7. Performance	1. The T24 application is convenient to use and easy to access. 2. The T24 application can be easily adapted to changing operational needs. 3. The T24 application is well integrated so that the work process runs more efficiently. 4. The T24 application has specific module functions according to user needs. 5. The T24 application is reliable and does not easily experience errors. 6. The T24 application is reliable so it rarely experiences downtime or errors that disrupt operations. 7. The T24 application responds quickly so there is no

		significant delay in response time when processing data.
Information Quality (X2)	1. Suitability to needs 2. Timeliness 3. Accuracy and minimal errors 4. Up-to-date information 5. Relevance 6. Clarity and conciseness	1. The T24 application provides information that suits the user's needs. 2. The T24 application presents information in a timely manner. 3. The T24 application presents accurate information with a small possibility of error. 4. The T24 application provides up-to-date information. 5. The information displayed is relevant and easy for users to understand. 6. Presentation of information in the application is concise and clear.
Quality of Service (X3)	1. Assurance 2. Problem solving (Responsive) 3. Understanding user needs (Empathy) 4. User-friendly display	1. Users feel safe accessing/sending data through the T24 application. 2. The T24 application provider quickly resolves user issues. 3. The T24 application understands user needs. 4. The T24 application has an intuitive and easy-to-understand interface for users.
Perceived Usefulness (Z)	1. Increased work efficiency 2. Increased productivity 3. Ease of use	1. T24 app helps to improve my work efficiency. 2. T24 app increases my productivity. 3. T24 app is easy to use to complete tasks.
User Satisfaction (Y1)	1. Overall satisfaction (Overall Satisfaction) 2. Fulfillment of expectations 3. Application recommendations (Recommendation)	1. Overall, users are satisfied using the T24 application. 2. The T24 application meets user expectations according to the requirements and formats needed. 3. Users will recommend the T24 App to other users.

This table can be used to design research questionnaires and measure user perceptions of system quality, information quality, service quality, perceived usefulness and user satisfaction on the T24 application.

RESULTS AND DISCUSSION

Research Instrument Test

Evaluation of Measurement Model (Outer Model)

The requirement for the outer loading value is that it must have a value above 0.7; this value indicates that the variables and dimensions have met the convergent validity requirements (Hair et al, 2019).

Table 3.
Outer Loading Values

Indicator	User Satisfaction	Information Quality	Quality of Service	System Quality	Perceived Usefulness
X1.1				0.625	
X1.2				0.698	
X1.3				0.862	
X1.4				0.754	
X1.5				0.796	
X1.6				0.852	
X1.7				0.880	
X2.1		0.865			
X2.2		0.866			
X2.3		0.828			
X2.4		0.855			
X2.5		0.872			
X2.6		0.796			
X3.1			0.833		
X3.2			0.788		
X3.3			0.918		
X3.4			0.887		
Y1.1	0.917				
Y1.2	0.927				
Y1.3	0.928				
Z1.1					0.942
Z1.2					0.957
Z1.3					0.923

(Source: SmartPLS Data Processing Results, 2024)

Table 3 above shows the convergent validity test using the PLS Algorithm method. From this process, a research model is obtained consisting of indicators that have an outer loading value > 0.7, which means that the values of these indicators have been declared valid, while for items X1.1 and X1.2, because they have an outer loading value smaller than 0.7, these items will be discarded.

Table 4.
Average Variance Extracted (AVE)

Variables	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
User Satisfaction	0.915	0.915	0.946	0.854

Variables	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Information Quality	0.921	0.922	0.939	0.718
Quality of Service	0.879	0.888	0.917	0.736
System Quality	0.887	0.891	0.917	0.689
Perceived Usefulness	0.935	0.935	0.959	0.885

(Source: SmartPLS Data Processing Results, 2024)

In this study, testing was also carried out using the Average Variance Extracted (AVE) analysis approach, where the AVE value in all latent variables must have an AVE value > 0.50 (Hair et al, 2019). In this study, all latent variables were found to have an AVE value > 0.5 so that it can be concluded that all indicators in each latent variable have met the convergent validity requirements.

Table 5.
Discriminant Validity of HTMT

Relationship Between Variables	Heterotrait-Monotrait Ratio (HTMT)
Information Quality <-> User Satisfaction	0.811
Service Quality <-> User Satisfaction	0.878
Quality of Service <-> Quality of Information	0.875
System Quality <-> User Satisfaction	0.894
System Quality <-> Information Quality	0.825
System Quality <-> Service Quality	0.823
Perceived Usefulness<-> User Satisfaction	0.814
Perceived Usefulness<-> Information Quality	0.878
Perceived Usefulness<-> Quality of Service	0.832
Perceived Usefulness<-> System Quality	0.900

(Source: SmartPLS Data Processing Results, 2024)

Table 5. above shows that the results of the discriminant validity (HTMT) measured reflectively have an HTMT score of less than 0.90, so it can be concluded that the test can be continued.

Reliability Test

The next stage in smartPLS is to conduct reliability testing. Reliability testing in smartPLS is indicated by the Cronbach's Alpha value, Composite Reliability, which must have a value above 0.7 and must have an AVE (Average Variance Extracted) value with a value above 0.5. The above conditions are requirements in conducting reliability testing (Hair et al, 2019).

Table 6.
Reliability Test Results

Variables	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
User Satisfaction	0.915	0.915	0.946	0.854
Information Quality	0.921	0.922	0.939	0.718
Quality of Service	0.879	0.888	0.917	0.736
System Quality	0.887	0.891	0.917	0.689
Perceived Usefulness	0.935	0.935	0.959	0.885

(Source: SmartPLS Data Processing Results, 2024)

From table 4.12 above, it is explained that the Cronbach's Alpha, Composite Reliability (CR) value has a value greater than 0.7. This is also reinforced by the AVE (Average Variance Extracted) value above 0.5. This condition shows that all constructs have met the reliability testing requirements, so that it can be concluded that all constructs are proven to be reliable, and statistically, the data in this study can be relied on to carry out further analysis stages.

Structural Model Evaluation (Inner Model)

Standardized Root Mean Square Residual (SRMR) Value

The PLS model is declared to have met the Goodness of fit model criteria if the SRMR value is <0.1, and the model is declared to have a perfect fit if the SRMR value is <0.08 (Bentler & Bonett, 1980).

Table 7.
Standardized Root Mean Square Residual (SRMR)

Mark	Saturated Model	Estimated model
SRMR	0.066	0.066

(Source: SmartPLS Data Processing Results, 2024)

Table 4.13 above shows the results of the Goodness of fit model test, showing that the SRMR value of the saturated model is 0.066 <0.08 and the SRMR value of the estimated model is 0.066 < 0.08; both values are smaller than 0.08. Thus, it can be concluded that the model is stated as a good fit, so it is suitable for use to test the research hypothesis.

Coefficient of Determination (R2)

According to Chin (1998), the R Square value is categorized as strong if it is more than 0.67, moderate if it is more than 0.33 but lower than 0.67, and weak if it is more than 0.19 but lower than 0.33.

Table 8.
Coefficient of Determination (R2)

Variables	R-Square	Category
User Satisfaction	0.819	Strong
Perceived Usefulness	0.774	Strong

(Source: SmartPLS Data Processing Results, 2024)

Based on Table 8 above, it explains that the variables of system quality, information quality, service quality, and perceived usefulness are able to provide a strong contribution to user satisfaction, which is 0.819 or 81.9% and the remaining 8.1% is influenced by other variables not examined in this study, while system quality, information quality and service quality are able to provide a strong contribution to perceived usefulness, which is 0.774 or 77.4% and the remaining 22.6% is influenced by other factors outside the model.

Hypothesis Testing and Discussion

In this analysis, it is necessary to identify several criteria, including p-value, T statistic and path coefficient that connects endogenous and exogenous variables. If in these criteria the P-value is obtained <0.05 , then it can be identified that the exogenous variable has a significant effect on the endogenous variable with the direction of influence adjusted to the sign on its path coefficient.

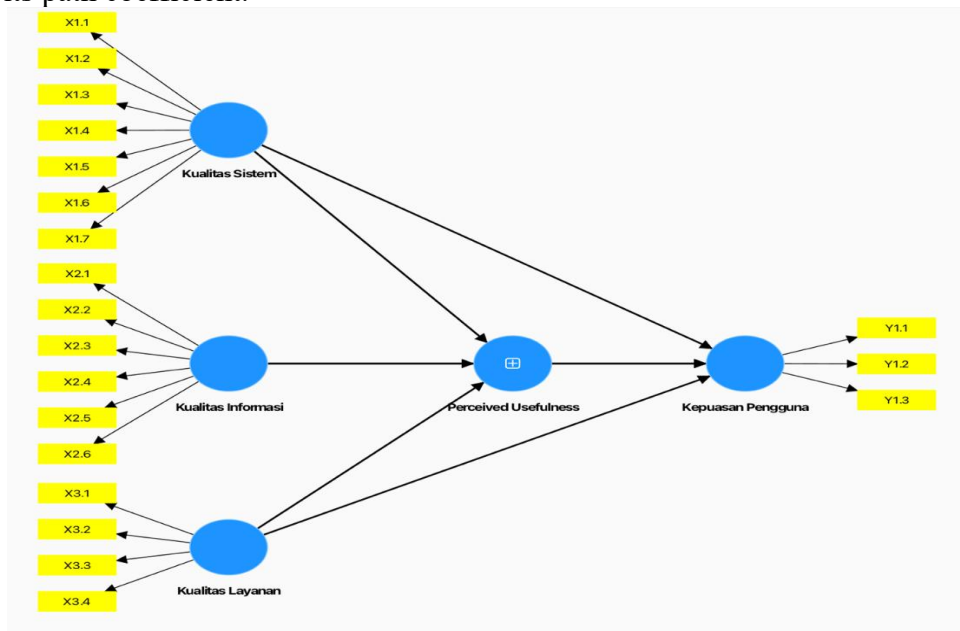


Figure 5
Initial Testing Model

(Source: SmartPLS Data Processing Results, 2024)

Based on considerations from the measurements in Table 4.6, the indicators that will be removed are: **X1.1** and X1.2. So, the final model is formed after the deletion is carried out as follows:

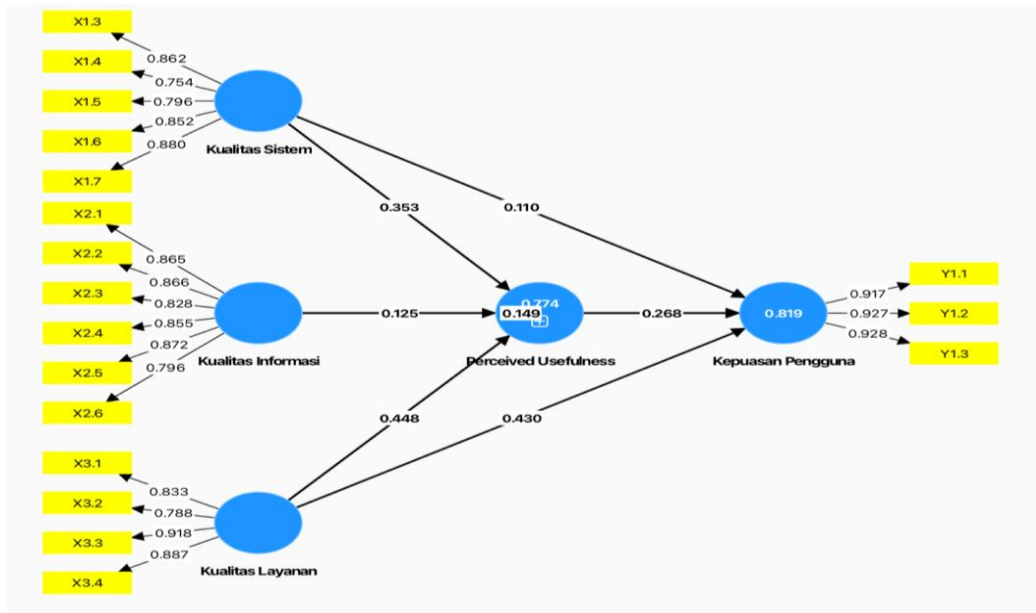


Figure 6
Final Testing Model - Bootstrapping Estimation Results
 (Source: SmartPLS Data Processing Results, 2024)

Table 9.
Path Coefficient (Direct Effect)

Influence Between Variables	Original Sample (O)	T Statistics (O/STDEV)	P Values	Conclusion	Information
Information Quality -> User Satisfaction	0.149	1,132	0.258	No effect	Hypothesis rejected
Information Quality -> Perceived Usefulness	0.125	0.814	0.416	No effect	Hypothesis rejected
Service Quality -> User Satisfaction	0.430	3,567	0,000	Significantly Influential	Hypothesis accepted
Service Quality -> Perceived Usefulness	0.448	3,460	0.001	Significantly Influential	Hypothesis accepted
System Quality -> User Satisfaction	0.110	0.975	0.329	No effect	Hypothesis rejected
System Quality -> Perceived Usefulness	0.353	2,873	0.004	Significantly Influential	Hypothesis accepted
Perceived Usefulness -> User Satisfaction	0.268	2,477	0.013	Significantly Influential	Hypothesis accepted

(Source: SmartPLS Data Processing Results, 2024)

Service quality and perceived usefulness are variables that have a significant influence on user satisfaction because the p-value is less than 0.05. In addition, system quality has a greater influence on perceived usefulness compared to user satisfaction directly. On the other hand, information quality does not show a significant influence on

user satisfaction or perceived usefulness because the p-value is greater than 0.05. This illustrates that service factors and perceived usefulness need more attention in increasing user satisfaction.

Table 10.
Indirect Effect (Specific Indirect Effect)

Influence Between Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Information Quality -> Perceived Usefulness -> User Satisfaction	0.034	0.030	0.042	0.793	0.428
Service Quality -> Perceived Usefulness -> User Satisfaction	0.120	0.117	0.065	1,836	0.066
System Quality -> Perceived Usefulness -> User Satisfaction	0.095	0.089	0.051	1,848	0.065

(Source: SmartPLS Data Processing Results, 2024)

Table 10 above shows that the perceived usefulness variable was tested as a mediating variable between three independent variables (information quality, service quality, and system quality) on user satisfaction.

The Influence of Information Quality on User Satisfaction

The results of the study indicate that the quality of information on the T24 application does not have a significant effect on user satisfaction, with a T Statistics value of 1.132 and a P Value of 0.258 (greater than 0.05). This indicates that although the T24 application provides relevant, accurate, and up-to-date information, this aspect is not strong enough to directly increase user satisfaction. Users of the T24 application may prioritize their direct experience, such as ease of use of the application or the reliability of the services provided.

This finding is consistent with research by Budiarto et al. (2021), which found that in the context of digital applications, such as financial or customer service applications, users are more likely to evaluate satisfaction based on service quality and overall user experience rather than information quality.

The Influence of System Quality on User Satisfaction

The results of the study indicate that the system quality in the T24 application does not have a significant effect on user satisfaction, with a T Statistics value of 0.975 and a P Value of 0.329 (greater than 0.05). This indicates that although the T24 application has a reliable, stable system and minimal technical disruptions, this is not enough to directly affect user satisfaction. T24 users may consider system quality as something basic or the minimum standard expected from a digital financial service application, so this aspect is not the main determinant of their satisfaction.

This finding is in line with the research of Putra et al. (2021), which shows that in the context of digital applications, such as financial applications, system quality is considered a supporting element rather than a primary element in creating user satisfaction. For T24 application management, these results indicate the need to focus on aspects that have a more direct impact on user satisfaction.

The Influence of Service Quality on User Satisfaction

The results of the study show that service quality has a significant effect on user satisfaction, with a T Statistics value of 3.567 and a P Value of 0.000 (less than 0.05). This indicates that elements of service quality, such as response speed, friendliness, and ability to solve user problems, play an important role in determining the level of user satisfaction. In this context, the user's interaction experience with the services provided by the application is the main key to creating satisfaction. This finding is in line with research by Wang et al. (2021), which found that service quality is one of the dominant factors in increasing user satisfaction of digital-based applications.

Based on these results, it is important for organizations to continuously improve their service quality. In the context of the T24 application, managers can ensure that all customer service channels, whether through chatbot features, help centers, or manual customer service, can function responsively and adequately.

The Influence of Information Quality on Perceived Usefulness

The results of this study indicate that information quality does not have a significant effect on perceived usefulness with a coefficient value of 0.125 and a significance value of 0.814 which is greater than 0.05. This finding is in line with several previous studies, such as that conducted by Lim et al. (2021), which stated that information quality is not always directly related to increased perceived usefulness, especially when other factors, such as ease of use and system speed, are more of a priority for users.

Overall, although the quality of information in the T24 application is an element that cannot be ignored, the results of this study indicate that other factors, such as ease of use, speed of access, and relevance of information to the user's operational needs, can further influence the perception of perceived usefulness. Therefore, it is important for developers and stakeholders in the use of T24 to focus more on improvements in the functional and design aspects of the application, to ensure that users experience maximum benefits from this application in the context of their banking operations.

The Influence of System Quality on Perceived Usefulness

The results of this study indicate that system quality has a significant effect on perceived usefulness with a coefficient value of 0.353 and a significance value of 0.004 which is smaller than 0.05. In the context of the T24 application, which is a core banking system used by global financial institutions, this finding confirms the importance of system quality in shaping user perceptions of the usefulness of the application. System quality in this case includes various factors such as reliability, performance, ease of use, and the application's ability to process transactions quickly and accurately. This study confirms the findings obtained by Lim et al. (2021), which states that high system quality can increase the perception of usefulness felt by users, because a reliable and efficient system will support user productivity in carrying out its operations.

Overall, the results of this study underscore the importance of system quality in shaping the perception of usefulness in the T24 application. With good system quality, including reliability, ease of use, and security, the T24 application is able to increase the effectiveness and efficiency of users in carrying out their tasks, which in turn will make the application feel more useful.

The Influence of Service Quality on Perceived Usefulness

The results of this study indicate that service quality has a significant effect on perceived usefulness with a coefficient value of 0.448 and a significance value of 0.001 which is smaller than 0.05. This study is in line with a study by Lim et al. (2021) which shows that high service quality, especially in the form of fast and effective user support, can increase the perception of application usefulness for users.

Overall, the results of this study underscore the importance of service quality in enhancing perceived usefulness of the T24 application. Service quality, including responsive technical support, adequate training, and good communication with users, plays a major role in strengthening users' perceptions of the benefits obtained from using the application.

The Influence of Perceived Usefulness on User Satisfaction

Based on the results of the study showing that Perceived Usefulness has a significant effect on User Satisfaction with a coefficient value of 0.268, a t value of 2.477, and a significance of 0.013, it can be concluded that user perceptions of the benefits provided by the application have a positive impact on their level of satisfaction. Perceived Usefulness refers to the extent to which users feel that using an application can improve their performance or meet their needs.

This study is in line with previous studies showing that Perceived Usefulness has a significant influence on user satisfaction. For example, research by Kumala et al. (2020) found that Perceived Usefulness influences the interest in using GoPay among generation X in Surabaya. Overall, this study highlights the importance of Perceived Usefulness in increasing application user satisfaction. For T24 application developers, focusing on improving features that are perceived as useful by users, as well as ensuring ease of use and building trust, will contribute to increasing user satisfaction and loyalty.

The Mediating Role of Perceived Usefulness between System Quality and User Satisfaction

The results of this study indicate that perceived usefulness does not play a significant role as a mediator in the relationship between system quality and user satisfaction, with coefficient values indicating a weak relationship. Previous research by Lim et al. (2021) found that although system quality contributes to perceived usefulness, other factors, such as overall user experience and services provided, also play an important role in shaping user satisfaction. This indicates that user satisfaction does not only depend on the usefulness they feel, but is more influenced by the overall experience of using the system.

The Mediating Role of Perceived Usefulness between Information Quality and User Satisfaction

The results of this study indicate that perceived usefulness does not play a significant role in mediating the relationship between information quality and user satisfaction. Although the quality of information provided in the T24 application can improve user understanding of transaction and operational data, the usefulness perceived by users is not enough to directly influence the level of user satisfaction. This is in line with research conducted by Lim et al. (2021), which found that good information quality does not always have a direct effect on user satisfaction if it is not supported by other factors, such as ease of access or quality of service provided.

The implication of this finding is that T24 developers and providers need to broaden their focus, not only improving the quality of information provided, but also paying attention to other aspects that affect user satisfaction. In previous research (DeLone & McLean, 2003), information quality was considered to directly affect satisfaction because users focused more on the relevance, completeness, and accuracy of information than on the perception of its usefulness.

The Mediating Role of Perceived Usefulness between Service Quality and User Satisfaction

The results of this study indicate that perceived usefulness does not play a significant role in mediating the relationship between service quality and user satisfaction. Although high service quality, such as responsive technical support and adequate training, can increase perceived usefulness, these benefits are not enough to directly affect the level of user satisfaction.

Research by Zhou et al. (2010) shows that service quality is often more related to users' emotional experiences (e.g., customer support or responsive service) than to cognitive benefit perceptions such as perceived usefulness. Research by Tan et al. (2023) also supports this finding, highlighting that while good service quality can strengthen perceived usefulness, user satisfaction is more influenced by a variety of other factors.

CONCLUSION

Based on the analysis and discussion, it can be concluded that system quality and information quality do not affect user satisfaction, while service quality has a significant effect on user satisfaction. System quality has a significant effect on perceived usefulness, while information quality does not affect perceived usefulness. Service quality also has a significant effect on perceived usefulness. In addition, perceived usefulness has a significant effect on user satisfaction, but does not mediate the relationship between system quality, information quality, or service quality on user satisfaction.

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