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Analysis of the Factors Driving the Use of Mobile Banking Super App

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ABSTRACT
This study examines the factors that drive the adoption of mobile banking in Indonesia, using the case study of PT Bank XYZ's application. The theoretical framework used includes the Technology Acceptance Model (TAM) to measure user acceptance, the Information Systems Success Model (ISSM) to assess system quality, and Nielsen's Usability Framework to evaluate the aspects of user experience and convenience. Additional variables such as trust, perceived security, and promotion are also integrated. Data was collected from 410 active users in DKI Jakarta and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) against 18 proposed hypotheses. The results show that usability is influenced by learnability and memorability, while service quality has a direct impact on perceived usefulness. Information and system quality are proven to be significant through the full mediation of perceived ease of use. Similarly, intention to use is influenced by usability and ease of use only through the mediation of usefulness. In addition, promotion and perceived usefulness are proven to strengthen the intention to use the application, which ultimately encourages the actual use of mobile banking
Keywords: mobile banking adoption, TAM, Delone and McLean ISSM, system acceptability, PLS-SEM.
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1. INTRODUCTION:

The development of the internet has played an important role in Indonesia's transition to the digital age. Banks now have the chance to create technology-based services like internet and mobile banking as well as other digital financial services thanks to digitalization. Technological advances enable banks to provide various services through online banking, mobile banking, and other digital platforms. In addition, the role of banks as stipulated in Law Number 10 of 1998 is undoubtedly a major one, namely collecting money from the general public and returning it in the form of credit. This role not only identifies banks as financial institutions but also as economic engines that enhance the general public's quality of life. One of the technological innovations presented by banks is mobile banking. Mobile banking is the use of any device to carry out financial activities, including transfers, balance checks, e-wallet top-ups, bill payments, and prepaid services, all of which can be accessed according to the user's wishes (Zakariah & Shariff, 2025).

From the data presented by CNBC Indonesia, BRI occupies the top position as the bank with the largest number of mobile banking application users. BRI's mobile banking application, namely BRImo, recorded user growth of 30.3% on an annual basis, increasing from 25.7 million users in the same period the previous year to 33.5 million users. The second position is occupied by BCA, a large private bank in Indonesia. From 28.3 million to 30.8 million, the number of BCA mobile banking users grew by 9%. Bank Mandiri comes in third. When compared to other banks, this state-owned bank saw the largest growth, increasing the number of mobile banking users by 39% to reach approximately 24 million (Setiawati, 2024).

It is impossible to separate the role of aggressive promotional factors used by banks from the substantial number of users each bank has of its mobile banking applications. Promotion is a type of marketing communication that seeks to inform, sway, and motivate customers to use the provided goods or services (Tien et al., 2024). Examples of promotions that are often given by banks include discounts for bill payments, the awarding of points that can be exchanged for gifts, and exemption of administrative fees for transactions with a certain minimum balance. From research conducted by Yuliani and Amin (2022), the promotion factor has proven to be one of the important factors influencing user interest in using digital banking services (Yuliani & Amin, 2022), including mobile banking applications. Therefore, the author decided to make the promotion factor one of the important factors to be studied in this study.

This fact shows that banks in Indonesia continue to compete to be the best. PT Bank XYZ is one of the banks in Indonesia that also continues to compete, as evidenced by the launch of a mobile super banking app based on Android and iOS in October 2021. This mobile banking has many features that are useful for its users, such as checking balances without login, e-wallet linkage, quick pick transactions, online onboarding, QR payments, QR accept transfers, bill money, deposit, and cash withdrawal without a card, and so on. This feature was developed to answer users' demands for convenience, speed, and flexibility in transacting anywhere, anytime, and following the current trend where users prefer digital transactions.

It turns out that the bank's mobile banking app, which was used for the study, has below-average ratings and reviews in addition to data on user growth. According to this data, the mobile banking app has received 3.2 out of 5 stars

from 5.4 thousand App Store ratings and 3.9 out of 5 stars from 615 thousand Google Play ratings. According to the assessment, the most well-liked one is the one with five stars. Nevertheless, based on the reviews given, a large number of users continue to express dissatisfaction with the mobile banking application's quality.

The most common complaint, with 902 incident tickets, was that users were not registering. In second place, there were complaints about user failure to log in to the mobile banking application, with 680 incident tickets. In addition, there were also many complaints about the failure to make domestic transfers of 248 tickets, as well as the failure to make payments with a total of 74 tickets. Other complaints included the failure to activate debit and credit cards recorded on 73 incident tickets, the failure to make a foreign exchange transfer on as many as 49 tickets, and the problem of inappropriate account or savings information experienced by 37 users. There were also reports related to the failure to open an account through the application for a total of 34 tickets, as well as 28 related reports that could not open the application at all. Furthermore, there were reports of failure to pay QR for 17 tickets, not receiving OTP during registration for 14 tickets, and failure to top up e-wallets, which recorded 12 incident tickets.

According to user complaints, a large number of users continue to believe that the mobile banking application's quality falls short of their expectations, which ultimately impacts their use of the app. This demonstrates that the bank conducting the research has not been able to optimize its mobile banking implementation. Thus, studies are required to examine the elements that motivate users to use mobile banking apps, with an emphasis on application quality and usability as well as user comfort and experience (usability).

The modest growth in mobile banking user adoption is likely attributable to several issues, especially poor user trust and concerns about security, alongside the applications' overall quality and ease of use. Numerous mobile banking apps from different Indonesian banks have encountered significant security issues in recent years. One instance is the Jenius mobile banking app, which had a problem with user money being lost.

As an anticipatory measure and an effort to improve security, Jenius implements a usage restriction policy, which limits transactions to only be made through one verified device (Putri, 2021). This policy aims to protect users and strengthen user trust in mobile banking applications. In addition to the incident experienced by Jenius in May 2023, the BSI mobile banking application also experienced significant disruptions. This disruption was confirmed by BSI management, who stated that there was a cyber attack that caused the disruption (CNBC Indonesia, 2023).

The fact that Indonesian banks have previously experienced security-related incidents underscores the significant need to consider security when using mobile banking apps. Because today's internet-connected technology is susceptible to a variety of cybersecurity threats, including unencrypted data, malware, spoofing, phishing, and more, users rely significantly on a sense of security in every transaction they make. Protecting digital transactions from these threats is the primary objective of integrating cybersecurity into mobile banking apps (Kumar, 2023). Realizing this, the Financial Services Authority (OJK) also regulates various aspects of technology governance, including cybersecurity, to prevent and minimize potential threats that can harm users. With a strong and reliable security system, user trust in mobile banking applications can increase, thereby encouraging users to be more active in using the application (Darmiasih & Setiawan, 2020).

Recognizing the significance of security and user trust for mobile banking app usage, these two were chosen by the authors as the principal factors to explore in the study. This method differs significantly from earlier research. The authors' decision to investigate security and user trust as primary drivers of mobile banking use is a key difference from prior studies and is highly relevant to the bank involved in the research. Furthermore, to fully understand the elements that encourage app use, this study will examine the effect of promotional factors on user behavior.

The study conducted a literature review by searching a number of international journal portals, including Scopus, Emerald Insight, IEEE Xplore, ScienceDirect, and Google Scholar, related to the issues mentioned above. It turns out that the “Technology Acceptance Model (TAM)” can be used to explain issues regarding how users accept and utilize mobile banking applications. This model provides a strong and simple explanation of the acceptance of technology and user behavior towards the technology. TAM is designed to predict the acceptance rate of applications as well as the factors that affect them (Venkatesh & Davis, 1996). Research by Chaterine et al. (2023) supports this, demonstrating that a number of factors significantly impact the use of mobile banking applications, including perceived usefulness, perceived ease of use, privacy and security, perceived trust, and social influence (Chaterine et al., 2023).

The study by Sawa et al. (2024) also demonstrates that perceived utility, perceived ease of use, and perceived security are factors that have been shown to influence the use of this mobile banking application, particularly in the context of the bank's mobile banking application where the research was conducted. Additionally, Dea Safira et al. (2023) have demonstrated that the use of mobile banking applications is influenced by perceived usefulness and trust factors. Nevertheless, it has not been demonstrated that the perceived ease of use factor influences. The research conducted by Dea Safira et al. (2023) provides evidence that is consistent with the research conducted by Febriandika et al. (2023). This is an intriguing finding to support the author's future research..

Furthermore, the study aims to combine TAM with “DeLone and McLean's Information Systems Success Model (ISSM)” to better understand the components of application quality. Hidayah et al. (2020) have used this combined approach for academic applications running on mobile devices. The investigation found a strong connection between application acceptance by users and

five key factors: how useful it seemed (perceived usefulness), how easy it seemed to use (perceived ease of use), and the quality of the system, information, and service. One hypothesis, though, remains unproven: the connection between perceived ease of use and service quality (Hidayah et al., 2020). This discovery caught the author's attention and prompted further research to support it, with a particular emphasis on the bank's mobile banking app as the research object.

By combining TAM and Nielsen System Acceptability, the author hopes to gain a thorough understanding of the application quality aspect while also delving into the application's usability, user comfort, and ease of use. Lacka and Chong (2016) also used this combination approach in a study that examined social media adoption in the context of business-to-business (B2B) marketing. The research concluded that perceived usability is a significant driver of the intention to use social media. This usability is positively affected by learnability and memorability but negatively associated with efficiency, suggesting B2B marketers do not anticipate great productivity. Crucially, perceived usefulness was not found to be correlated with perceived usability, and factors like errors and satisfaction had no major impact on it (Lacka & Chong, 2016).

A primary concern for the author is re-examining this finding within the setting of the bank's mobile banking app, as there is currently very little in-depth research focusing on the specific factors influencing mobile banking app usage, particularly for the banks relevant to this study. These factors include ease of use, user comfort and experience (usability) as determined by Nielsen System Acceptability, application quality assessment using the ISSM, and user acceptance of applications as assessed by the TAM. In addition, this study also considers several other important factors, such as the perception of security that users feel, the level of user trust in the application, and the promotional role presented by the application. This comprehensive approach is what distinguishes the research that will be carried out from previous research. Departing from the facts that have been explained previously and the current research conditions in Indonesia, the author attempts to compile a study. This research is expected to cover the existing background as a whole, so as to provide benefits to the academic world and the banking industry in Indonesia.

Method

The quantitative methodology in this study means that the research focuses on numerical data that can be measured statistically to test hypotheses. Google Forms was chosen because it is practical, easily accessible, and able to reach a wider range of respondents without geographical limitations. In this case, the researcher compiled a number of statements or questions related to the research variables. Respondents then provided written responses according to the scale provided (e.g., Likert scale). The purpose of the questionnaire was to evaluate statements made by the bank conducting the research about the acceptance of its mobile banking applications. The following is a description of the data collection method used in this study. An active user (USAK) of the bank's mobile banking app is the subject of this study. Based on internal data from the bank and the large population of 14.9 million users, the authors applied the Slovin formula to determine the minimum sample size needed for this study. By setting a margin of error (e) of five percent (5%), from the calculation results, it can be seen that this study requires a minimum sample size of around 400 respondents. Random sampling is the sampling technique employed, which offers every member of the population an equal chance of being chosen as a sample member, either singly or in groups. At the data processing and analysis stage, the author conducted validity and reliability tests, processing with PLS-SEM, and hypothesis tests from the results of questionnaire responses, so that the results of hypothesis testing and factor analysis were obtained.

2. RESULTS AND DISCUSSION

Outer Model

Convergent Validity

Verifying that each indicator accurately measures the construct is the aim of convergent validity. The Average Variance Extracted (AVE) value was used in this study for testing; if the AVE is at least 0.5, it means the construct explains more than half of the variance of its indicators, meeting the convergent validity requirement for additional analysis.

Table 1. Convergent Validity Test Results

Variabel	AVE	Threshold	Information
Learnability (LE)	0.726	0.5	Valid
Memorability (ME)	0.754	0.5	Valid
Information Quality (IQ)	0.702	0.5	Valid
System Quality (SQ)	0.66	0.5	Valid
Service Quality (SEQ)	0.753	0.5	Valid
Trust (TR)	0.686	0.5	Valid
Perceived Security (PS)	0.751	0.5	Valid
Perceived Usability (PUS)	0.676	0.5	Valid
Perceived Ease of Use (PEOU)	0.682	0.5	Valid
Perceived Usefulness (PU)	0.761	0.5	Valid

Promotion (PR)	0.705	0.5	Valid
Intention to Use (IU)	0.779	0.5	Valid
Actual Use (AU)	0.773	0.5	Valid

According to Table 1, every variable in this study has an AVE value greater than 0.5, indicating that every construct satisfies the requirements for convergent validity. This demonstrates that over 50% of the variance of each latent construct can be explained by the indicators that were employed. Thus, each variable is declared valid and trustworthy to represent the concept measured in this study.

Construct Reliability

To evaluate a construct's internal consistency its indicators' ability to measure the same latent variable construct reliability is used. In this research, Cronbach's Alpha was the test employed; a result of 0.7 or higher signifies good reliability for the construct's indicators.

Table 2. Cronbach's Alpha Values

Variabel	Cronbach's Alpha	Threshold	Information
LE	0.874	0.7	Reliabel
ME	0.891	0.7	Reliabel
IQ	0.893	0.7	Reliabel
SQ	0.871	0.7	Reliabel
SEQ	0.891	0.7	Reliabel
TR	0.847	0.7	Reliabel
PS	0.89	0.7	Reliabel
PUS	0.84	0.7	Reliabel
PEOU	0.843	0.7	Reliabel
PU	0.896	0.7	Reliabel
PR	0.861	0.7	Reliabel
IU	0.859	0.7	Reliabel
AU	0.853	0.7	Reliabel

Each variable in this study is deemed reliable because Table 2 displays Cronbach's Alpha values greater than 0.7. This finding signifies that every indicator can reliably measure its corresponding latent construct, validating the research instrument's suitability for measuring the idea.

Inner Model

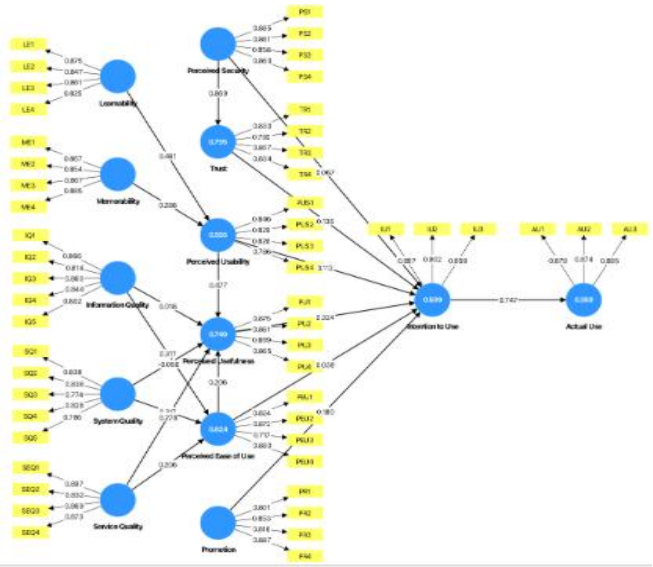

Figure 1. PLS-SEM Algorithm Output Model

R Square

The R Square statistic indicates the proportion of variation in the dependent variables that the independent variables can account for within a research model. R Square values fall between 0 and 1; a higher value signifies a greater explanatory power of the independent variables over the dependent variable's variation.

Table 3. Test Results R Square (R^2)

	R Square	R Square Adjusted
Actual Use	0.559	0.557
Intention to Use	0.599	0.593

In the Actual Usage variable, more than half (55.9%) of the variation can be influenced by the factors tested, while the rest (44.1%) is likely influenced by other factors outside the research model. For the Intention to Use variable, the level of explanation is higher at 59.9%, which indicates that the independent factors in the model play a significant role in shaping users' intentions to use mobile banking applications. In addition, the consistency between the R Square and Adjusted R Square values shows that the model does not experience overfitting, so the analysis results can be considered stable and reliable in explaining the relationship between variables.

Path Coefficient (significant)

Path Coefficient is a measure of the magnitude of an independent variable's direct effect on the dependent variable. Significance is established if the t-statistic exceeds 1.96 and the p-value is less than 0.05. A higher coefficient value means the independent variable has a greater influence.

Table 4. Results of Path Coefficient Bootstrapping Direct Effect

Hipotesis	Path Coefficients	Original Sample (O)	t-statistics	p-values	Information
H1	*LE -> PUS*	0,491	5,308	0,000	Evident
H2	ME -> PUS	0,288	3,585	0,000	Evident
H3	IQ -> PU	0,018	0,234	0,815	Unproven
H4	SQ -> PU	-0,056	0,510	0,610	Unproven
H5	SEQ -> PU	0,278	2,547	0,011	Evident
H6	IQ -> PEOU	0,317	4,266	0,000	Evident
H7	SQ -> PEOU	0,317	4,113	0,000	Evident
H8	SEQ -> PEO	0,206	2,742	0,006	Evident
H9	PS -> TR	0,869	48,966	0,000	Evident
H10	PUS -> PU	0,477	6,086	0,000	Evident
H11	PEOU -> PU	0,206	2,438	0,015	Evident
H12	PS -> IU	0,067	0,740	0,459	Unproven
H13	TR -> IU	0,136	1,586	0,113	Unproven
H14	PUS -> IU	0,112	1,285	0,199	Unproven
H15	PU -> IU	0,324	3,985	0,000	Evident
H16	PEOU -> IU	0,038	0,396	0,692	Unproven
H17	PR -> IU	0,180	2,462	0,014	Evident
H18	IU -> AU	0,747	17,849	0,000	Evident

Based on the test results, several relationships between variables were declared significant, such as:

Learnability (H1) and Memorability (H2) have an effect on Perceived Usability, supported by path coefficients of 0.491 (t=5.308, p=0.000 < 0.05) and 0.288 (t=3.585, p=0.000 < 0.05) respectively.

Service Quality (H8), Information Quality (H6), and System Quality (H7) significantly affect Perceived Ease of Use, with coefficients of 0.206 (t=2.742, p=0.006 < 0.05), 0.317 (t=4.266, p=0.000 < 0.05), and 0.317 (t=4.113, p=0.000 < 0.05).

Service Quality (H5) also affects Perceived Usefulness, shown by a coefficient of 0.278 (t=2.547, p=0.011 < 0.05).

Perceived Security (H9) has a very strong effect on Trust, with the highest coefficient value of 0.869 (t=48.966, p=0.000 < 0.05).

Perceived Usability (H10) and Perceived Ease of Use (H11) influence Perceived Usefulness, supported by coefficients of 0.477 (t=6.086, p=0.000 < 0.05) and 0.206 (t=2.438, p=0.015 < 0.05).

Perceived Usefulness (H15) and Promotion (H17) affect Intention to Use, with coefficients of 0.324 (t=3.985, p=0.000 < 0.05) and 0.180 (t=2.462, p=0.014 < 0.05).

Intention to Use (H18) is proven to have a strong effect on Actual Use, indicated by a coefficient of 0.747 (t=17.849, p=0.000 < 0.05).

Instead:

Information Quality (H3) and System Quality (H4) do not affect Perceived Usability, as indicated by coefficients of 0.018 (t=0.234, p=0.815 > 0.05) and -0.056 (t=0.510, p=0.610 > 0.05).

Perceived Security (H12), Trust (H13), Perceived Usability (H14), and Perceived Ease of Use (H16) do not have a significant effect on Intention to Use, with coefficients of 0.067 (t=0.740, p=0.459 > 0.05), 0.136 (t=1.586, p=0.113 > 0.05), 0.112 (t=1.285, p=0.199 > 0.05), and 0.038 (t=0.396, p=0.692 > 0.05).

Indirect Effect Bootstrap Results

To determine whether a variable influences another through an intermediary variable (mediation), the indirect effects bootstrapping results are utilized. Since the direct influence between variables is frequently negligible but can manifest indirectly through other variables, this analysis is crucial.

Table 5. Results of Path Coefficient Boostrapping Indirect Effect

Path Coefficients	Original Sample (O)	t-statistics	p-values	Ket.
IQ -> PEOU -> PU	0.065	2.257	0.024	Evident
SQ -> PEOU -> PU	0.065	2.211	0.027	Evident
PUS -> PU -> IU	0.155	3.351	0.001	Evident
PEOU -> PU -> IU	0.067	2.271	0.023	Evident

Table 5 confirms that all indirect effects are significant (t>1.96, p<0.05). Information Quality and System Quality affect Perceived Usefulness through the mediation of Perceived Ease of Use. Similarly, Perceived Usefulness mediates the relationship between Perceived Usability and Perceived Ease of Use on Intention to Use. These indirect relationships demonstrate that perceived ease of use and usefulness are the essential mediating links for boosting application usage intentions, even when a direct effect is absent.

3. DISCUSSION

H1: The Effect of Learnability (LE) on Perceived Usability (PUS)

The results show that the first hypothesis (H1), namely that ease of learning affects the perception of usability, is accepted. This is evidenced by a t-statistic value of 5.308, which is greater than 1.96, and a p-value of 0.000, which is significant because it is less than 0.05. Empirically, these results confirm that users rate mobile banking applications as more useful, convenient, and easy to use if the application is easy to learn from the start. In other words, the simpler the learning process for the application's features, the stronger the positive perception of usability. These findings support the opinion of Agudo-Peregrina et al. (2014), who stated that user perceptions are significantly influenced by the ease of learning component. The findings of this study are consistent with Lacka & Chong's (2016) investigation into business-to-business (B2B) marketing in China. The real-world impact of these findings is that in order to increase user acceptance and satisfaction, mobile banking service providers should create an interface that is easy to use and intuitive.

H2: The Effect of Memorability (ME) on Perceived Usability (PUS)

The data supports the second hypothesis (H2) that memory influences perceived ease of use, as shown by a significant t-statistic (3.585) and p-value (0.000). This finding indicates that the easier it is for users to remember how to use the mobile banking application after a period of inactivity, the higher their perception of ease of use and comfort in using the application. Thus, consistent features, clear interface design, and simple navigation are important factors in shaping positive user perceptions. These findings are consistent with Lacka & Chong's (2016) research on B2B marketing in China, which emphasizes that memorability contributes positively to usability assessments. Practically speaking, this means that mobile banking service providers must keep the design and flow of application usage consistent so that users can quickly remember how to use it, ultimately boosting user satisfaction and loyalty.

H3: The Effect of Information Quality (IQ) *on Perceived Usefulness* (PU)

Information quality did not significantly influence users' perception of the mobile banking application's usefulness (H3 was not supported), as the t-statistic was only 0.234 and the p-value was 0.815. The findings suggest that the perceived usefulness of the application is primarily driven by factors like ease of use and overall interaction, rather than just the accuracy or relevance of the information presented. There is no evidence suggesting that the quality of information significantly impacts the perceived benefits that users derive from mobile banking applications. These findings suggest that while the information available may be accurate, complete, and relevant, it does not necessarily improve users' judgments of the app's usefulness in the use being studied. This outcome contrasts with Hidayah et al.'s (2020) study on academic mobile applications.

However, with a t-statistic value of 2.257 and a p-value of 0.024, this study discovered that the impact of information quality became significant when mediated by perceived ease of use. This suggests that precise and unambiguous information will only be deemed beneficial if users initially find it simple to comprehend and utilize. The practical implication is that *mobile banking* providers need to ensure that information is not only complete and correct but also presented in a simple, concise, and easy-to-understand manner in order to increase the perception of ease of use, which ultimately reinforces the belief that apps provide real benefits.

H4: The Effect of System Quality (SQ) *on Perceived Usefulness* (PU)

Results indicate that the fourth Hypothesis (H4) is not supported in this case, t = 0.510 0.05 as also as a p- value > 0.05 for opportunistic sample was observed. This implies that the quality of system (spanning reliability, performance stability and ease of use) has not necessarily been proven to result in a direct enhancement on perceived-usefulness with respect to mobile banking applications. These results indicate that well-established technical quality of the app is not a key mechanism driving users' perceptions about how useful apps are. In contrast, our findings contradict with the study of Hidayah et al. (2019), in that mobile academic applications were used.

Nevertheless, this research also revealed that the impact of system quality on perceived usefulness was significant when it was mediated by perception ease of use (t=2.211; p= 0.027). This suggests that a smooth, effective, and simple user experience is the first step towards achieving optimal system quality, which in turn raises the user's perception that the app offers genuine advantages like time savings, transaction effectiveness, and increased productivity. The practical implication is that in order to make the advantages of the application more apparent, mobile banking providers should give top priority to developing systems that are not only dependable but also enable user interaction.

H5: The Effect of Service Quality (SEQ) *on Perceived Usefulness* (PU)

Through the t-statistic of 2.547, which is greater than 1.96, and a p-value of 0.011, which is less than 0.05, the study's findings supported the fifth hypothesis (H5), which holds that perceived usefulness is influenced by service quality. This implies that users' perceptions of the advantages of mobile banking applications increase with the quality of services offered, such as prompt responses, sufficient

support, and unambiguous instructions. These findings show that quality services not only increase user satisfaction but also reinforce their belief that the app is beneficial in meeting their daily banking needs. The study's findings are consistent with those of Hidayah et al. (2020), who focused on the significance of service quality as a determinant in the perception of benefits in the context of mobile academic applications.

In order for users to reap the full benefits of the application, mobile banking providers must continuously enhance the quality of digital services through prompt responses, expert customer support, and clear instruction.

H6: The Effect of Information Quality (IQ) *on Perceived Ease of Use* (PEOU)

Information quality significantly affects the perception of ease of use (H6 accepted). Specifically, more accurate, complete, and clear information in mobile banking apps leads users to rate the application as easier to use. This finding emphasizes that clear and reliable information can help users understand the application's functions more quickly, reduce confusion, and create a more comfortable and efficient user experience. These findings indicate that clear and structured information can reduce confusion, simplify the learning process, and increase user comfort in operating applications (Purwati et al., 2021). The study's findings are consistent with those of a mobile academic application by Hidayah et al. (2020). The practical implication is that in order to improve user experience and make it more intuitive, mobile banking service providers must make sure that information is presented in an easy-to-understand, transparent, and accessible way.

H7: The Effect of System Quality (SQ) *on Perceived Ease of Use* (PEOU)

Through a test statistic of 4.113, which is greater than 1.96 and a p-value of less than 0.05, the results demonstrated that the seventh hypothesis (H7), according to which perceived ease of use is influenced by system quality, was accepted. This implies that users will perceive mobile banking apps as being easier to use if the system is of higher quality, which includes responsiveness, stability, ease of navigation, and dependability. These results demonstrate how crucial the system's functional and technical elements are to producing an easy-to-use, effective, and seamless user experience. The study's findings align with Hidayah et al.'s (2020) research on mobile academic applications. The practical implication is that *mobile banking providers* must continue to develop a responsive, secure, and stable system quality in order to support a stronger and more sustainable perception of convenience from the user side.

H8: The Effect of Service Quality (SEQ) *on Perceived Ease of Use* (PEOU)

Service quality significantly affects perceived ease of use (H8 accepted), with a t-statistic of 2.742 exceeding 1.96 and a p-value of 0.006, which is less than the 0.05 threshold. This demonstrates that users are more likely to believe that mobile banking apps are user-friendly when high-quality services are offered, such as prompt assistance, responsive technical support, and clear guidance. These findings indicate that quality services can help reduce barriers to use, improve convenience, and accelerate user adaptation to applications. However, these results are different from the research of Hidayah et al. (2020) in a mobile academic application, which states the opposite. The practical implication is that *mobile banking* providers need to strengthen support services, both technically and non-technically, through digital help centers, interactive guides, and digital literacy education, so that users can more easily understand and use the application optimally.

H9: The Effect of Perceived Security (PS) on Trust (TR)

The study's findings support the validity of the H9 hypothesis. With a p-value of 0.000, which was less than 0.05, the t-statistical value of 48.968 surpassed the cutoff of 1.96. This demonstrates that users' trust in mobile banking apps increases with their perception of security. These results are in line with Almaiah et al.'s (2023) study on Saudi Arabian mobile banking apps, which also highlights how crucial security features are to gaining users' trust. The practical implication of these results is that banks need to ensure application security through the application of cutting-edge technologies, such as data encryption, double authentication, and privacy protection, to maintain and increase user trust in the use of mobile banking services (Mohd Thas Thaker et al., 2022).

H10: The Effect of Perceived Usability (PUS) on Perceived Usefulness (PU)

The results of this study support the tenth hypothesis (H10). Empirical evidence is shown by a p-value of 0.000, which is less than 0.05, and a t-statistic value of 6.086, which far exceeds the threshold of 1.96, so that the relationship between the variables can be declared significant. These findings show that the higher the level of comfort and ease of use of mobile banking applications, the greater the users' perception of the usefulness of these applications. In other words, a simple, comfortable, and hassle-free user experience will reinforce the belief that the application is truly useful.

Furthermore, these results are in line with the research by Lacka & Chong (2018) in the context of business-to-business transactions in China, which confirms that system usefulness is a major factor in shaping perceptions of usefulness. The practical implication is that banks need to consistently improve their interface design to make navigation smoother, user interaction more effective, and the user experience more positive. These efforts not only enhance perceived usefulness but also contribute to long-term user loyalty.

H11: The Effect of Perceived Ease of Use (PEOU) on Perceived Usefulness (PU)

The eleventh hypothesis (H11) is supported, as the relationship between the variables is significant, with a p-value of 0.015 (less than 0.05) and a t-statistic of 2.438 (greater than 1.96). These results indicate that users will be more convinced that mobile banking applications are truly useful if they are easy to operate, have an efficient workflow, and present minimal obstacles in their use. In other words, the perception of usefulness is not only influenced by the features offered, but also by the extent

to which the application is able to provide a practical and hassle-free experience, thereby increasing user confidence to continue using it (Wandira et al., 2022). Hidayah et al. (2020) on mobile-based academic applications, Alfadda & Mahdi (2021) on Zoom applications for language learning, Almaiah et al. (2023) on mobile banking in Saudi Arabia, and Tien et al. (2024) on e-banking in Vietnam are among the earlier studies that support these findings. The practical implication of these results is that banks need to ensure the app is easy to use by an entire segment of users, including those less familiar with the technology, so that ease of use not only increases convenience but also reinforces the belief that the app is truly beneficial to help users achieve their financial goals.

H12: The Effect of Perceived Security (PS) on Intention to Use (IU)

The results of the investigation demonstrated that the H12 hypothesis was disproved. With a p-value of 0.459, which is greater than 0.05, the t-statistical value of 0.740 is less than 1.96. This indicates that users' intention to use mobile banking applications has not been demonstrated to be significantly impacted by their perception of the applications' security. This result contrasts with that of a study on mobile banking in Saudi Arabia conducted by Almaiah et al. (2023), which discovered a strong correlation between perceived security and intention to use. The practical implication of these findings is that while security is an important factor for building trust, it is not a direct factor that drives usage interest. Therefore, banks need to position security more as a basic requirement, while other factors, such as convenience, usability, and service innovation, should be more emphasized to influence the intention of use.

H13: The Effect of Trust (TR) on Intention to Use (IU)

The H13 hypothesis was disproved in light of the study's findings. With a p-value of 0.113, which is greater than 0.05, the t-statistical value of 1.586 is less than 1.96. Accordingly, it has not been demonstrated that users' degree of trust in mobile banking apps whether it be in relation to the dependability, honesty, or legitimacy of the service provider significantly influences their intention to use the app. These findings are different from the research of Almaiah et al. (2023), who found trust had a significant effect on mobile banking in Saudi Arabia, as well as Tien et al. (2024) in e-banking services in Vietnam. The practical implication of these findings is that while trust remains important for maintaining long-term loyalty, it does not necessarily drive the initial intention to use the app. Therefore, promotional and user education strategies should not only emphasize the trust aspect but also strengthen the **real usability factor and user experience** so that user interest can be further built.

H14: The Effect of Perceived Usability (PUS) on Intention to Use (IU)

The study's findings demonstrated that the H14 hypothesis was disproved. With a p-value of 0.199, which is greater than 0.05, the t-statistical value of 1.285 is less than 1.96. Therefore, users' intention to use mobile banking is not significantly impacted by their perception of the application's ease and convenience. With a t-value of 3.351 greater than 1.96 and a p-value of 0.001 less than 0.05, further analysis revealed that perceived usability significantly influenced intention to use through perceived usefulness mediation. This suggests that the user's initial perception of the app's usefulness is influenced by the new ease-of-use experience.

This finding contrasts with that of Lacka & Chong's (2016) study on business-to-business transactions in China, which discovered a direct correlation between perceived usability and intention to use. Only when the effect was mediated by the perception of usability in this study was it significant. The practical implication of these findings is that banks should not only focus on designing applications that are easy to use, but also ensure that those conveniences **are directly linked to real benefits** for users, such as transaction efficiency, speed of service, and ease of access. That way, the perception of convenience can really be translated into interest in using mobile banking applications.

H15: The Effect of Perceived Usefulness (PU) on Intention to Use (IU)

The study's findings support the validity of the H15 hypothesis. With a p-value of 0.000 less than 0.05, the t-statistical value of 3.985 is higher than 1.96. This implies that a user's intention to use mobile banking applications increases with their perception of their advantages. These findings confirm that benefit perception is a key factor driving interest in use, as users are more likely to be interested in apps that provide real added value. These findings are consistent with earlier studies by Alfadda & Mahdi (2021) on Zoom application use, Lacka & Chong (2016) in China, Almaiah et al. (2023) on mobile banking in Saudi Arabia, and Tien et al. (2024) on e-banking in Vietnam. The practical implication of these findings is that banks must ensure that mobile banking applications are able to provide **clear functional benefits** to users, such as transaction efficiency and improved service convenience, so that interest in use can continue to grow.

H16: The Effect of Perceived Ease of Use (PEOU) on Intention to Use (IU)

The H16 hypothesis was disproved in light of the study's findings. With a p-value of 0.692, which is greater than 0.05, the t-statistical value of 0.396 is less than 1.96. This indicates that user intent to use mobile banking has not been demonstrated to be directly impacted by the application's ease of use, which includes features like straightforward navigation, effective procedures, and an intuitive interface. With a t-statistical value of 2.271 greater than 1.96 and a p-value of 0.023, further analysis revealed that PEOU significantly impacted IU through the mediation of perceived usefulness. Accordingly, the impression of convenience first strengthens the conviction that the app is beneficial before ultimately promoting the desire to use it. These results are in contrast to the research of Hidayah et al. (2020), Alfadda & Mahdi (2021), Almaiah et al. (2023), and Tien et al. (2024), which found a direct influence of PEOU on IU. The practical implication of these findings is that banks must **link the convenience aspect to the real benefits**, for example, time efficiency and convenience of transactions, in order for the perception of convenience to actually contribute to usage interest.

H17: The Effect of Promotion (PR) on Intention to Use (IU)

The study's findings support the validity of the H17 hypothesis. A p-value of 0.014 is less than 0.05, and a t-statistical value of 2.462 is higher than 1.96. This indicates that it has been demonstrated that promotional activities, like ads, discounts, special offers, or marketing campaigns, positively impact users' intentions to use mobile banking apps. These findings confirm that the right promotion can increase interest, build awareness, and encourage users' interest in trying apps (Yuliani & Amin, 2022). The findings of this study are consistent with those of Tien et al. (2024), who discovered that promotion significantly influences Vietnamese consumers' intentions to use e-banking services. These findings have the practical implication that banks must create appealing, consistent, and pertinent promotional strategies to increase the uptake of mobile banking apps.

H18: The Effect of Intention to Use (IU) on Actual Use (AU)

The H18 hypothesis was accepted in light of the study's findings. With a p-value of 0.000, which is less than 0.05, the t-statistical value of 17.849 is higher than 1.96. This implies that a user is more likely to actually use a mobile banking application in practice if they have a higher intention or desire to do so. These findings reinforce the theory that intention is a major predictor of actual behavior, where strong intentions are usually followed by actual actions. The findings of this study are consistent with those of Alfadda & Mahdi (2021), who discovered that when using the Zoom application for language learning, intention significantly influences actual use. The practical implication of these findings is that banks should actively **foster intent to use** through education, promotion, and enhancement of the app's benefits, as strong intent will lead to real, sustainable use.

4. CONCLUSION

According to the study's findings, perceived usability is significantly impacted by learnability and memorability, whereas perceived usefulness is not directly impacted by information or system quality, but rather by perceived ease of use and service quality. While perceived usefulness is influenced by perceived usability and perceived ease of use, perceived security boosts trust. Perceived utility and promotion have a greater impact on intention to use than security, trust, or convenience factors. Lastly, it has been demonstrated that intention to use greatly promotes the actual use of mobile banking apps. Based on these findings, the practical implications for PT Bank XYZ are the importance of improving the ease of use of the application through the development of a simple interface, a fast and secure system, and the presentation of clear and easy-to-understand information. In addition, creative promotional strategies such as cashback, loyalty points, and collaborations with e-commerce can be utilized to strengthen the perception of the application's benefits in the eyes of users.

However, this study has a number of limitations. First, the scope of respondents is still limited to one region, so the results cannot necessarily be generalized to all mobile banking users in Indonesia with diverse demographic characteristics. Second, this study only uses a cross-sectional design, so the relationship between variables is analyzed at a single point in time, even though mobile banking application usage behavior can change with technological developments and user habits. Therefore, future research should expand the scope of respondents to various regions and demographic groups, as well as add moderating variables such as age, education level, or financial literacy to provide a more comprehensive picture. In addition, a longitudinal approach can be used to understand the dynamics of usage intentions and actual usage over time, thereby providing deeper insights into the sustainability of mobile banking adoption.

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