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The effect of perceived usefulness, perceived security, and trust on intention to use in mobile banking with perceived ease of use as a mediation variable

Michael Eliezer Prawira[1*], Vinnie Stevianie[2], Rianto Nurcahyo[3]
[1,2,3]International Business Management Department BINUS Business School Bina Nusantara University, Indonesia; michael.prawira@binus.ac.id (M.E.P.) vinnie.stevianie@binus.ac.id (V.S.) rnurtjahjo@binus.ac.id (R.N.).

Abstract: This study examines how Perceived Usefulness, Perceived Security, and Trust impact the intention to use mobile banking, with Perceived Ease of Use acting as a mediating variable. The research targets users of the BCA mobile banking app in Indonesia. This study employs a quantitative cross-sectional survey involving 140 BCA mobile users domiciled in Jakarta and Tangerang through purposive sampling. The analysis used Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that Perceived Usefulness, Perceived Security, and Trust positively affect Perceived Ease of Use. Additionally, Perceived Ease of Use significantly affects the Intention to Use and partially mediates the relationship between the independent variables and the Intention to Use. Perceived Usefulness, Perceived Security, and Trust directly impact the Intention to Use, with Trust and Perceived Security having the strongest influence. The structural model accounts for 47.1% of the variance in Perceived Ease of Use and 70.7% of the variance in the Intention to Use. In summary, the adoption of mobile banking relies on a mix of practical benefits, security assurance, trust in system reliability, and ease of use. These findings offer practical suggestions for banks to boost mobile banking adoption by enhancing security features, fostering user trust, and improving app usability.

Keywords: *Intention to use, Mobile banking, Perceived ease of use, Perceived security, Perceived usefulness, Trust.*

1. Introduction

Digital bank innovations such as mobile banking, internet banking, and payments via QR. OJK stated that digital transactions globally grew by 118%, from USD 3.09 trillion in 2017 to USD 6.75 trillion from 2017 to 2021. The rapid advancement of technology certainly affects various sectors of the company, especially the banking sector. The development of technology implemented by banking companies is quite rapid, starting from *electronic banking*, also known as *e-banking*. The banking sector itself provides several e-banking services such as call banking, SMS banking, mobile banking, and internet banking. In Indonesia, the development of digital transactions grew very significantly, by 1,556% from 2017 to 2020. Digital transactions reached IDR 786.35 trillion in 2021, an increase of IDR 281.39 trillion or 55.73% compared to 2020, which was only IDR 504.96 trillion [1].

Currently, banks take advantage of technological development opportunities to make it easier to access services for users by making services much easier to achieve, namely with the existence of the bank*'s Digital Mobile Banking* service [2]. In the past few years, the era of digitalization of banking and payment systems has changed, especially in Indonesia. Banking institutions use advanced technology to create a variety of electronic channels that reduce the need for traditional banks. Mobile banking (M-banking) has become a new technology, a new trend, and is increasingly in demand by the public [2]

M-banking services in banking provide various services to customers who are busy and do not have time to visit the bank directly. By using only a smartphone, customers can access several services

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* Correspondence: michael.prawira@binus.ac.id

offered by the bank, such as viewing balance information, changing passwords, transferring funds, paying bills, and other transactions on a mobile phone that can be used anytime and anywhere [3].

Security has a positive effect on customers' interest and intention in using digital banks. Although the implementation of advanced security systems has been undertaken, views on the influence of security on customer switching intentions are mixed. Attention to security and convenience is one of the main focuses in the implementation of digital banking services. The security of digital bank services is a challenge related to the use of the internet as the main communication tool at this time [2]. Head of the BI Payment System Policy Department, Dicky Kartikoyono, estimates that the growth of mobile banking and digital banking in 2025 will reach 52%. Digital banking transaction growth grew 40.1% annually (YoY) in November 2024. In digital transactions, mobile applications achieved a growth of 29.7 percent (YoY). This increase was triggered by an increase in the use of digital payments through QRIS, which shot up by 170.1 percent (YoY), and retail transactions through BI-Fast, which grew by 41.5 percent. The majority of users are Generation Z (Gen Z) and millennials. Consumers are increasingly confident in the efficiency, convenience, and flexibility achieved by using mobile banking. In November 2024, the growth of digital bank transactions increased by 40.1 percent year-on-year (YoY), as revealed by Bank Indonesia [4].

BCA Mobile itself has high features and security levels, so that users feel comfortable and safe making transactions on BCA Mobile repeatedly. MyBCA application strongly supports foreign transactions, making it very easy for users to do business, and BCA's mobile banking services can also be used by all people [5]. MyBCA is also a service application from Bank BCA, which is not much different from BCA Mobile, with the main difference being that MyBCA can be accessed via the internet, while BCA Mobile can only be accessed via mobile phone. The features on MyBCA are more diverse, and the daily transaction limit is larger than BCA Mobile, but the difference is not significant. However, BCA *m-banking* customers still often experience disruptions and complaints when making transactions, which can lower users' trust [5].

Based on this description, this study aims to fill the gap in previous studies by directly examining how Perceived Usefulness (PU), Perceived Security (PS), and Trust form Perceived Ease of Use (PEOU), and how these three variables directly or indirectly affect Intention to Use (ITU). This research is expected to provide insights for financial institutions in building customer digital trust as a whole, especially Bank BCA, not only through technical aspects but also through transparent communication and data management. In this study, a supporting theory is also used, namely the Technology Acceptance Model (TAM), which explains human behavior that accepts modern technological advances. This research relates to the independent variables used in this study: PU, PS, and Trust. The mediation variable used is PEOU. The dependent variable is ITU. With this research, it is also hoped that it can answer several questions.

2. Literature Review and Hypotheses Development

2.1. Technology Acceptance Model (TAM)

This theory was developed by Davis [6]. TAM itself is designed to predict the acceptance of new technologies. TAM also focuses on attitudes and intentions that have been applied in several technologies. This model has two main factors that affect the intention of adoption, namely PU and PEOU. PU itself is described as the possibility of potential users to use certain technologies to improve performance on their work, while PEOU itself is the extent to which potential users/users anticipate the system will run smoothly and easily [2].

2.2. Mobile Banking

M-banking is a type of electronic commerce (e-commerce) that serves as an important framework for mobile application technology or services. Mobile banking is part of digital banking and represents one of the significant innovations in modern banking because it enables fast, easy, and secure access to financial services. In today's era, people also use m-banking as an alternative for financial transactions

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such as shopping, doing business, donating, transferring funds, and other financial services [2]. The mobile banking service itself also simplifies processes for users with features such as using Qris to pay for items and transferring funds without needing to visit the bank. Empirical studies show that security perceptions, institutional trust, and trust in technology significantly influence user intentions and behaviors in adopting mobile banking applications. However, risk perception was not found to be a significant predictor in this context [2].

2.3.Perceived Usefulness

Perception of usefulness or perceived usefulness in technology is when individuals are confident that the system or technology they are using has a beneficial impact on them [7]. Perception of usefulness can be defined as a state where individuals believe that the system they are using can help them achieve their goals. If the individual is confident and believes that the system or technology has a positive impact, they are likely to use the system continuously.

There are five signs for evaluating the perception of usefulness, namely: 1) Work faster, with the adoption of systems or technologies at work making performance more effective. 2) Practically, the use of technology can provide many benefits that can make an individual's routine tasks more effective. 3) Increase productivity, individuals who use information technology can better and more effectively manage and utilize the resources of the technology they use for daily tasks. 4) Increase effectiveness, information technology can help individuals to increase their effectiveness in achieving goals with less time and lower cost. 5) Improving performance, individuals who use technology can improve their performance in terms of quality and quantity to carry out tasks [7].

2.4. Perceived Security

Perceived security is defined as the extent to which users feel confident that a mobile banking application is safe from all risks. The application of security techniques to ensure the security of user services, transactions, privacy, and data is considered a top priority for the success of mobile banking services among customers. With a high level of security, individuals will feel safe and secure, as their privacy will always be well maintained [8].

There are several signs to look at regarding the perception of security, namely: 1) The system has a mechanism that can ensure security in sending and storing user information. 2) The system shows great concern for transaction security. 3) The system has good technical ability to ensure that no other party can replace it. 4) Be confident that unauthorized parties will not interfere with the data sent. 5) The system has adequate technical capabilities to ensure that hackers will not tamper with the data being sent. 6) Third parties will not be able to change the data transmitted. 7) The system has a good ability to ensure that third parties cannot change the data sent [7].

2.5. Trust

Trust is a very important basis in building relationships between users and technology-based systems, especially in *mobile banking services*. Trust reflects the belief that users have that the services used will protect their data, provide perfect service, and maintain the security of user transactions. Trust is the main basis for service users to feel safe and comfortable in using application services [9].

The higher level of trust will make users more open to the use of technology and more freely explore the features in the system or application. Trust owned by users will reduce users' worries about risks, mistakes, and other things that users are afraid of. Trust not only affects the user's sense of security but also determines the user's attitude and intention to use *mobile banking applications* [9].

2.6. Perceived Ease of Use

In the context of this study, the perception of ease of use can be defined as the level of ease of use of mobile banking applications. Based on this, when bank customers consider that mobile banking applications are easy to use, they will increase the chances of adopting the application. Additionally,

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when customers feel that interaction with the mobile banking application is easy to understand and clear, this will increase their intention to use the application [8].

Perceived ease of use is a significant factor driving the acceptance of technological innovations. It can also be defined as a person believing that using a specific information technology system will require minimal effort. Perceived ease of use is strongly positively related to the intention to use, which can foster trust between the two variables [10].

2.7. Intention to Use

Intention to use is defined as an individual's intention to use the service in the near future or use it on an ongoing basis. In the study focusing on online banking users in Malaysia, it was found that the intention to use was significantly influenced by trust and perceived ease of use [11].

The results of the study show that the higher the Trust level and the higher the Perceived Ease of Use, the greater the Intention to Use of the user to use the service in the long term [11].

2.8. Research Model

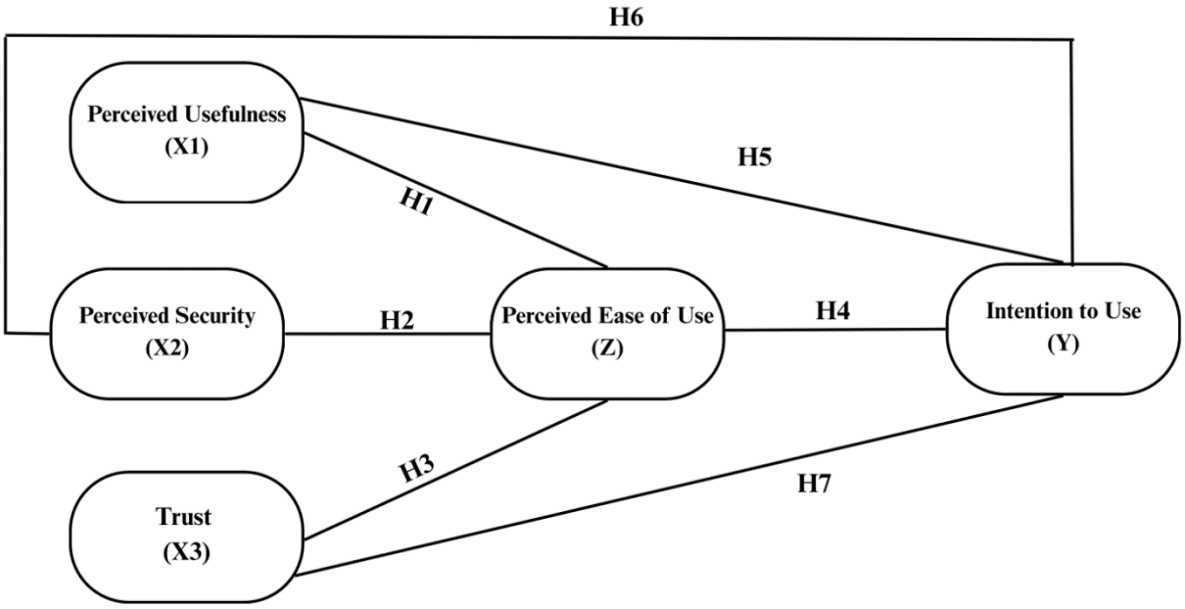

Figure 1.
Research Methods.

2.9. Relationship between Research Variables

2.9.1. Perceived Usefulness and Perceived Ease of Use

Technology discussion, Perceived Usefulness (PU), and Perceived Ease of Use (PEOU) are the two main policies that can influence individuals' intention and attitude toward using technology systems, especially in the context of *Mobile Banking*.

Perceived Usefulness has a positive effect on Perceived Ease of Use, which means that the more an individual or user feels that using *Mobile Banking* is useful for their performance, the easier the system is considered to be, and the easier it is to use [12].

Based on the results of the above study, the following hypotheses can be taken:

H_1: Perceived Usefulness has a positive effect on Perceived Ease of Use (PEOU) in the use of Mobile Banking.

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2.9.2. Perceived Security and Perceived Ease of Use (PEOU)

Perceived Security (PS) plays a significant role in shaping Perceived Ease Of Use (PEOU), especially in the context of *Mobile Banking*. When individuals feel that the system they are using is safe, they feel more comfortable and secure using it, which ultimately increases their Perceived Ease of Use of that application or system. Perceived Security positively influences Perceived Ease of Use in digital payment services in Indonesia [13].

Based on the results of the above study, the following hypotheses can be taken:

H_2: Perceived Security has a positive effect on Perceived Ease of Use (PEOU) in the use of Mobile Banking.

2.9.3. Trust And Perceived Ease of Use

Trust plays a very important role in shaping perceived ease of use. Users who trust the system or application tend to find it easy to use because they believe that the service will maintain data security and privacy, as well as provide good service. Trust is one of the main factors that can affect perceived ease of use in mobile banking services. Trust refers to users' belief that the system they use is secure, trustworthy, and designed to protect customers' personal data. If users feel safe and confident in the available services, they will be more comfortable exploring the features provided [9].

The existence of a high level of trust in the system provided will strengthen the perceived view of ease of use; trust creates a sense of security for customers and reduces doubts that may occur. Trust plays a major role in shaping a positive view of perceived ease of use and is the basis that drives the successful adoption of *mobile banking* technology in human life [9].

Based on the results of the above study, the following hypotheses can be taken:

H_3: Trust has a positive effect on the Perceived Ease of Use (PEOU) in the use of Mobile Banking.

2.9.4. Perceived Ease of Use and Intention to Use

Perceived Ease of Use (PEOU) is important to encourage Intention to Use (ITU) of mobile banking. If users feel that the mobile banking system or application is not complicated to use in any aspect, they will be more interested and more confident to stick with it. PEOU also magnifies a good initial experience, which will impact long-term thinking about wearing it. Perceived Ease of Use reduces the user's challenge to learn the system and also accelerates the process of individual adaptation to a new system or application, thus driving use intent positively [11].

Based on the results of the above study, the following hypotheses can be taken:

H_4: Perceived Ease of Use (PEOU) has a positive effect on Intention to Use (ITU) in the use of Mobile Banking.

2.9.5. Perceived Usefulness and Intention to Use

Perceived Usefulness (PU) is one of the main factors that can drive user intent to stay in Mobile Banking applications. If an individual or user feels that an application or system provides benefits to them, with examples of ease and agility in executing transactions and various application processes, they are likely to have the intention to continue using the application or system. Perceived Usefulness has a positive and important influence on the Intention to Use (ITU) of mobile banking in Bank BCA customers. This aligns with the TAM theory, which places Perceived Usefulness as a key indicator in the adoption of technology [12].

Based on the results of the above study, the following hypotheses can be taken:

H_5: Perceived Usefulness has a significant positive effect on Intention to Use (ITU) in the use of Mobile Banking.

2.9.6. Perceived Security and Intention to Use

Perceived Security (PS) certainly has a significant influence on the Intention to Use (ITU) of the system or application, especially in the use of mobile banking.

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Security plays a very important role in the intention to use (ITU) mobile banking. If users are confident that the services they use can maintain privacy and overall good security, then perceived security will increase, and users' intention to use will be formed consistently. This perception comes not only from the system used but also from the reputation of the institution that offers the service [14].
Based on the results of the above study, the following hypotheses can be taken:

H_6. Perceived Security has a significant positive effect on Intention to Use (ITU) in the use of Mobile Banking.

2.9.7. Trust and Intention to Use

Trust is the main indication in building a user's Intention to Use (ITU). Trust is considered the main basis that makes up the Intention to use mobile banking applications. Trust in this context means that customers are confident that the services provided are safe and reliable. If users are confident that the services used can protect privacy, personal data, respond well to problems, and keep every process transparent, then users will be more active in using existing services [11].
Based on the results of the above study, the following hypotheses can be taken:

H_7. Trust has a significant positive effect on Intention to Use (ITU) on the use of Mobile Banking.

3. Methodology

3.1. Data and Sample

This study employs a quantitative research design with a cross-sectional survey approach, suitable for measuring the influence of psychological and perceptual variables such as *Perceived Usefulness* (X1), *Perceived Security* (X2), and *Trust* (X3) on *Perceived Ease of Use* (Z) and *Intention to Use* (Y) within digital banking systems. Data analysis was conducted using Structural Equation Modeling (SEM) to examine causal relationships and the strength of influence among variables. The cross-sectional approach was chosen because the study observed subjects at a single point in time [15], effectively capturing current user perceptions.

The research model refers to the Technology Acceptance Model (TAM), which explains the factors influencing technology acceptance. In this model, X1, X2, and X3 act as independent variables, Z as mediating variables, and Y as dependent variables, allowing analysis of how perceptions of security, trust, and usability affect perceptions of ease and intention to use technology.

The research sample is a bank customer domiciled in the Greater Jakarta area. The determination of the number of samples was based on the guidelines of Hair, et al. [16] which recommend a minimum of 10 respondents per indicator. Therefore, with 14 indicators, 140 respondents are needed ($14 \times 10 = 140$) as the minimum sample size for SEM analysis, especially when the population size is not known for sure [16].

Data collection was carried out using an online questionnaire as the main instrument. The questionnaire contains statements that measure the variables X1, X2, X3, Z, and Y, and is arranged with an assessment scale to obtain relevant primary data. Respondents were asked to provide answers according to their experiences and perceptions regarding the use of digital banking services.

3.2. Research Instruments

This study uses three independent variables: *Perceived Usefulness* (X1), *Perceived Security* (X2), and *Trust* (X3); one mediation variable: *Perceived Ease of Use* (Z); and one dependent variable: *Intention to Use* (Y). The research instruments measuring these variables are based on various theories and previous research, presented in the following table.

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Table 1.
Variable Indicators.

Variables	Indicators
Perceived Usefulness (X1)	Transaction speed by using the app The app makes tasks complete faster.
Perceived Security (X2)	Feel secure when transacting online Privacy policy on the app Reliable app
Trust (X3)	Competent and effective application in handling transactions The provided app is reliable Apps can be trusted at all times The information provided is trustworthy
Perceived Ease of Use (Z)	Ease of learning The application is an innovation to facilitate transactions
Intention to Use (Y)	Tendency to use apps in the future Always use the app when the opportunity arises Predict app usage as soon as possible

3.3. Data Analysis Techniques

This study uses Structural Equation Modelling (SEM) analysis with SmartPLS software version 4. This method was selected because it can handle complex structural models and explain relationships between variables simultaneously [17]. After collecting respondent data, we performed steps including analyzing descriptive statistics, measurements, and structural models, followed by describing the associated hypotheses.

4. Results

4.1. Descriptive Statistics

Descriptive statistics analysis has been performed to summarize a data set based on observable characteristics. Below are the descriptive statistics of 140 people using mobile banking based in Jakarta and Tangerang.

Most of the respondents in this study were women (57.9%) and men (42.1%), domiciled in Jakarta (52.9%) and Tangerang (47.1%). The age range of 13-17 was 8.6%, 18-22 was 37.1%, and 23-28 was the most common at 54.3%. In terms of jobs, students dominated at 42.1%. Users have been using BCA's mobile banking application for 3-4 years, accounting for 35%.

Based on the results below, it shows that most respondents agree with all the question items in each variable. This suggests that Perceived Usefulness, Perceived Security, and Trust affect the Perceived Ease of Use, which also influences the Intention to Use BCA mobile banking payments.

Table 2 shows that Cronbach's alpha values of the five main variables range from 0.783 to 0.842, which is greater than the 0.7 threshold. In addition, the composite reliability (CR) values for all variables ranged from 0.888 to 0.927, also exceeding 0.7, suggesting that the constructs in this study met reliability standards. There are two measurement models: convergent validity assessment and discriminant validity. The convergent validity is evidenced through the reliability of the question, the reliability of the construction composite (CR), and the variance extracted by the construction. A good reliability value is indicated when the load value exceeds 0.70. The average extracted variant value (AVE) is used to test the validity of the convergence, and the value must be greater than 0.50.

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Table 1.
Demographics.

Demographic Character		Frequency (n)	Percentile (%)
Gender	Woman	81	57.9%
	Man	59	42.1%
Age	13-17	12	8.6%
	18-22	52	37.1%
	23-28	76	54.3%
Domicile	Jakarta	74	52,9%
	Tangerang	66	47,1%
Occupation	Student/Student	59	42,1%
	Aquarius	53	37,9%
	Entrepreneur/Entrepreneur	23	16,4%
	Housewives	5	3,6%
Years being BCA's Customer	< 1 year	12	8.6%
	1-2 years	31	22.1%
	3-4 years	49	35%
	>5 years	48	34.3%

Table 2.
Loadings, Cronbach's alpha, CR, AVE.

Variable	Items	Loading	Cronbach Alpha	CR (>0.7)	AVE (>0.5)
Intention to Use	IU1	0.848	0.812	0.888	0.727
	IU2	0.826			
	IU3	0.883			
Perceived Ease of Use	PEoU1	0.930	0.842	0.927	0.864
	PEoU2	0.929			
Perceived Security	PS1	0.839	0.814	0.889	0.728
	PS2	0.872			
	PS3	0.849			
Perceived Usefulness	PU1	0.910	0.783	0.902	0.822
	PU2	0.903			
Trust	T1	0.827	0.842	0.894	0.678
	T2	0.834			
	T3	0.801			
	Q4	0.831			

Table 3.
Result of discriminant validity – by Fornell-Larcker Criterion.

	IU	PEoU	PS	PU	T
IU	0.852				
PEoU	0.671	0.929			
PS	0.558	0.398	0.853		
PU	0.520	0.443	0.210	0.907	
T	0.607	0.544	0.142	0.245	0.823

The convergent validity of the indicators has been measured using the Fornell-Larcker criterion. Based on this criterion, the square roots of AVE for each construct are higher than the inter-construct correlations, indicating that discriminant validity has been established.

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Table 4.
Hypothesis Testing.

	Hypothesis	Path Coefficient	Mean	Standard Deviation	T-Statistic	P-Value	Information
H1	PU → PEOU	0.278	0.263	0.065	4.271	0.000	Significant
H2	PS - PEO	0.278	0.266	0.075	3.715	0.000	Significant
H3	T → PEOU	0.436	0.438	0.057	7.713	0.000	Significant
H4	PEOU → IU	0.202	0.199	0.059	3.454	0.001	Significant
H5	PU → IU	0.259	0.252	0.052	4.984	0.000	Significant
H6	PS → IU	0.368	0.368	0.044	8.357	0.000	Significant
H7	T → IU	0.380	0.384	0.062	6.164	0.000	Significant

Table 5.
R Square.

	R-square	R-square adjusted
IU	0.707	0.698
PEoU	0.471	0.459

The results of the Determination Coefficient in the SmartPLS output above show that the R Square value for Intention to Use is 0.707, indicating that 70.7% of the variables PU, PS, T, and Perceived Ease of Use can explain the variation in the Intention to Use variable. The remaining 29.3% is explained by other variables outside the study. Additionally, the R Square value for Perceived Ease of Use was 0.471, meaning that 47.1% of the variables PU, PS, and T can explain the variation in Perceived Ease of Use. The remaining 52.9% was explained by other variables outside the study.

5. Discussion

5.1. General Interpretation of Structural Relationships

The results from the PLS-SEM model show how respondents actually read and respond to the variables in this research. The coefficients do not move in extreme directions, but they fall within a range that makes sense when considering how people usually evaluate mobile banking. The paths from Perceived Usefulness and Perceived Security toward Perceived Ease of Use both land at 0.278, while Trust shows a stronger influence at 0.436. These values all pass the t-statistic threshold recommended in PLS references [16, 17], so each relationship is statistically supported and not weak. The way these three variables come together provides a picture that users rely not only on what the application can do or how safe it feels but also on how much confidence they place in the system as a whole.

The links that go directly to the Intention to Use show a similar pattern. Perceived Ease of Use contributes 0.202, Perceived Usefulness shows 0.259, Perceived Security at 0.368, and Trust at 0.380. All of them have p-values below 0.001, so they carry real meaning in shaping user intent. When these values are placed next to the R-Square levels, the overall structure becomes clearer. The R-Square for Perceived Ease of Use is 0.471, which indicates that PU, PS, and Trust account for a considerable part of why the system feels simple or manageable to use. Meanwhile, Intention to Use reaches an R-Square of 0.707, which means most of the variation behind whether users want to continue using BCA mobile can be explained by the four variables in the model. Studies in mobile banking adoption also show similar patterns where intention is shaped by a mix of cognitive and system-related factors rather than one single element [2, 11, 13, 14].

The measurement side of the model behaves normally. Cronbach's alpha values range from 0.783 to 0.842, and the composite reliability values span 0.888 to 0.927. These figures indicate respondents answered consistently with the constructs' intended functions [15, 18]. The AVE results above 0.678 demonstrate good convergent validity, and the discriminant validity aligns with the Fornell–Larcker criterion, as the square-root AVE values exceed the correlations across constructs [19]. All indicators have loading values above 0.80, which matches what other digital banking studies usually find when

testing similar constructs [5, 9]. No issues appear from the variance inflation indicators, so the estimation remains stable during the bootstrapping process.

5.2. Influence of Perceived Usefulness, Perceived Security, and Trust on Perceived Ease of Use

PU contributes to PEOU through a structural coefficient of 0.278 supported by indicator loadings of 0.910 and 0.903, creating a utilitarian-performance mechanism aligned with conceptual formulations that link functional output acceleration with cognitive ease in technology interaction [7, 12]. Respondents perceive system efficiency improvements as a reduction of operational friction, forming an interaction pathway commonly referenced in studies analyzing digital transaction acceleration in mobile interfaces [2, 3]. PS contributes to PEOU through a coefficient of 0.278 with indicator loadings ranging from 0.839 to 0.872, forming a security-driven perceptual stream influenced by encryption reliability, data integrity guarantees, and transactional protection frameworks documented in studies of mobile financial applications [8, 13]. High-security appraisal diminishes cognitive vigilance levels during system navigation, reducing perceptual strain associated with potential operational risk exposure. Trust generates the strongest influence on PEOU with a coefficient of 0.436 and indicator loadings of 0.827, 0.834, 0.801, and 0.831. These indicators correspond to system competence, transactional reliability, information accuracy, and functional credibility, forming a belief-driven cognitive map that stabilizes user interpretation of system behavior in environments requiring elevated procedural accuracy [5, 9, 20]. The distribution of predictive weight within this triadic configuration of PU, PS, and Trust reflects a multi-layered perceptual processing mechanism consistent with research emphasizing trust-sensitive contexts in mobile payment ecosystems [10, 14, 21]. The full pathway composition increases the structural capacity of PEOU to absorb variance from domains associated with utility perception, security appraisal, and behavioral assurance.

5.3. Influence of Perceived Ease of Use on Intention to Use

The pathway linking PEOU to ITU produces a coefficient of 0.202 with a t-statistic of 3.454, supported by indicator loadings of 0.930 and 0.929 capturing functional intuitiveness and procedural learnability. This coefficient reflects a moderate predictive intensity, aligning with empirical observations from mobile banking adoption analyses in Malaysian online banking populations, where PEOU influences behavioral intention through cognitive simplification mechanisms [11]. PEOU transmits perceptual signals derived from interface clarity, task-flow comprehensibility, and interaction fluency, creating an adoption stimulus grounded in user–system interaction theory referenced in multiple digital service utilization studies [13, 22]. Within this structural pattern, PEOU functions as a mediative conduit through which utility judgments, security evaluations, and trust appraisals shift into behavioral predispositions, forming a structural arrangement reflected across mobile financial technology research involving security-sensitive environments [2, 21]. The moderate effect magnitude distinguishes PEOU from PS and Trust within the behavioral pathway, positioning it as a perceptual facilitator rather than a dominant motivational driver.

5.4. Influence of Perceived Usefulness, Perceived Security, and Trust on Intention to Use

PU contributes to ITU with a coefficient of 0.259 supported by high indicator loadings associated with performance enhancement and procedural acceleration, aligning with TAM-based behavioral prediction frameworks where perceived instrumental gain reinforces behavioral engagement with financial technologies [6, 7, 12]. PS contributes to ITU with a coefficient of 0.368 and indicator loadings capturing data protection assurance, transactional integrity, and operational safeguarding, forming a protective–cognitive allocation pattern highlighted in security-centric digital adoption studies [3, 8, 13]. Trust generates the strongest influence on ITU with a coefficient of 0.380 and indicator loadings emphasizing system dependability, informational authenticity, and functional reliability, aligning with findings from mobile banking trust analyses conducted within institutional banking environments [5, 9, 14, 20]. The dominance of Trust and PS within the ITU structure corresponds to

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adoption dynamics often identified in environments where risk perception, institutional assurance, and system reliability guide behavioral affirmation more than utilitarian factors alone [2, 10, 21]. The allocation of predictive weight from PU, PS, and Trust produces a multi-determinant behavioral configuration consistent with adoption trajectories within rapidly digitizing financial ecosystems characterized by intensified institutional dependence.

6. Conclusion

This study investigates the determinants of mobile banking adoption among users by examining the roles of Perceived Usefulness, Perceived Security, Trust, and Perceived Ease of Use as predictors of Intention to Use. The analysis employs a PLS-SEM approach to evaluate the structural and measurement components of the model. The results indicate that the model demonstrates strong predictive capacity, supported by adequate reliability, convergent validity, and discriminant validity. The overall findings show that cognitive evaluations related to usefulness, security assurance, trust in system performance, and ease of interaction play significant roles in shaping user behavioral intentions within digital banking environments. The measurement indicators across all constructs exhibit high loading values, confirming the stable representation of each latent variable. The structural model explains 47.1% of the variance in Perceived Ease of Use and 70.7% of the variance in Intention to Use, which reflects meaningful explanatory power for behavioral intention in mobile banking usage. These values indicate that the tested factors function as substantial predictors in the context of digital financial service adoption.

Perceived Usefulness, Perceived Security, and Trust each have significant effects on Perceived Ease of Use. The influence of Perceived Usefulness suggests that users who recognize performance advantages and efficiency improvements tend to experience smoother interactions with mobile banking applications. The effect of Perceived Security shows that a strong perception of data protection and transaction safety contributes to reduced cognitive effort when interacting with digital platforms. Trust presents the strongest contribution to Perceived Ease of Use, illustrating that confidence in system reliability, accuracy, and stability enhances users' sense of comfort in navigating application features. Perceived Ease of Use also demonstrates a significant effect on Intention to Use. Users who experience clarity in system functions, fluency in interaction, and low operational complexity develop stronger intentions to adopt mobile banking services. This pattern aligns with commonly observed adoption behaviors in digital financial systems, where ease of operation acts as a mediator that connects cognitive assessments with behavioral outcomes. In addition to its mediating role, Perceived Ease of Use operates alongside Perceived Usefulness, Perceived Security, and Trust as a direct predictor of Intention to Use. Perceived Usefulness contributes by reinforcing performance expectations related to speed and task efficiency. Perceived Security contributes through assurance related to transaction protection and data integrity. Trust contributes through system dependability, credibility of information, and consistency of service performance. Among these determinants, Trust and Perceived Security exert the strongest influence, demonstrating that behavioral intention in mobile banking often depends on confidence in system reliability and safety.

Based on the statistical results, all seven hypotheses (H1–H7) are supported. Perceived Usefulness, Perceived Security, and Trust significantly affect Perceived Ease of Use (H1, H2, H3 supported). Perceived Ease of Use significantly affects the Intention to Use (H4 supported). Perceived Usefulness, Perceived Security, and Trust also significantly affect the Intention to Use (H5, H6, H7 supported). These findings highlight that mobile banking adoption is influenced by functional advantages, security, trust, and ease of interaction within digital financial ecosystems.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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