

Strategy to Increase Digital Banking Adoption at Bank Central Asia (BCA) Regional Office 2 Semarang

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Keywords:	Abstract
Digital Banking; Financial Technology; Consumer Behaviour; Security; Financial Literacy TAM.	This study examines why customers of Bank Central Asia (BCA) Regional Office 2 Semarang decide to use digital banking services. The research framework is adapted from the Technology Acceptance Model (TAM) and is extended by including digital literacy, trust in transaction security, perceived usefulness, ease of use, and digital product innovation. Data were collected through a quantitative survey of 92 BCA customers and analyzed using Structural Equation Modeling-Partial Least Squares (SEM-PLS) to identify which factors are most relevant to digital banking adoption. The findings reveal that trust in transaction security ($\beta=0.316$, $p<0.001$) and digital product innovation ($\beta=0.365$, $p<0.01$) have significant positive effects on digital banking adoption, explaining 84.1% of the variance in adoption behavior. In contrast, digital literacy, perceived usefulness, and ease of use were found to be statistically insignificant predictors in this context. These results suggest that for customers with high digital maturity, security and innovation factors outweigh traditional TAM constructs in driving adoption. The study offers practical input for BCA in strengthening customer confidence, improving digital features, and encouraging more consistent use of digital banking services.

INTRODUCTION

Changes in people's transaction behavior make banking services no longer only rely on branch offices. In Indonesia, the development of fintech, the internet, and the use of smartphones have encouraged banks to expand application-based service channels so that transactions can be carried out faster and more flexibly (Bounie et al., 2020). In this situation, digital banking is an important means because customers are increasingly accustomed to carrying out financial activities through digital devices that are used daily (Zhao et al., 2021).

BCA is one of the banks that is actively building digital services through BCA Mobile, KlikBCA, and myBCA (BCA Annual Report, 2023). Within the scope of BCA Regional Office 2 Semarang, the ownership of digital banking services has reached 82% of the total customers, but the active usage is only around 43%. This difference shows that having digital access is not always followed by regular usage behavior. Some customers still choose ATMs or branch offices, so it is necessary to explore what factors make digital banking services not fully used optimally (Kaur et al. 2021; Lin et al. 2020).

One aspect that is often associated with readiness to use digital banking is digital literacy. Customers who are not familiar with financial applications usually need additional help when learning transaction features, especially in higher age groups or groups who rarely use technology-based services (Hung et al., 2022). In addition, a sense of security is also the main

consideration. The issue of digital fraud, misuse of personal data, and cybercrime can make customers delay or limit the use of digital banking services (Chen & Chang, 2020).

Another factor that also needs to be considered is the perceived benefits and ease of application. Customers will assess whether digital banking really helps financial activities, for example speeding up transfers, reducing the need to come to branches, and facilitating transaction monitoring (Venkatesh et al., 2016). On the other hand, an application that is easy to understand, has clear navigation, and provides simple instructions will make users more comfortable in transacting (Davis, 1989).

Previous research has extensively discussed the relationship between digital capabilities and the use of banking services. Rahi et al. (2021) show that digital literacy can strengthen the intention to use digital banking. However, the study has not specifically placed private bank customers in Indonesia as the main context, especially BCA Regional Office 2 Semarang. Alalwan et al. (2018) also placed digital literacy as a factor related to risk perception, but have not reviewed in detail how age and education may affect the relationship. Therefore, this study is directed to fill the gap by testing digital literacy, security trust, usability perception, ease of use, and innovation of digital products in the context of BCA Regional Office 2 Semarang customers.

The novelty of this research lies in several aspects. First, this study provides the first comprehensive application of an extended TAM framework incorporating digital literacy, trust in transaction security, and digital product innovation specifically to BCA Regional Office 2 Semarang customers. Second, the research examines the relative importance of six factors—digital literacy, trust in transaction security, perceived usefulness, ease of use, and digital product innovation in explaining digital banking adoption, addressing the gap between ownership and active usage. Third, the study applies SEM-PLS analysis to test the hypothesized relationships, providing empirical evidence on which factors are most influential in the Indonesian digital banking context. Fourth, the research contributes to the theoretical development of technology adoption models by identifying when classical TAM constructs may lose their predictive power due to user maturity. The findings are expected to offer practical input for BCA in strengthening customer confidence, improving digital features, and encouraging more consistent use of digital banking services.

The purpose of this study is to assess the influence of digital literacy on digital banking adoption in BCA Regional Office 2 Semarang customers. This study also examines the role of trust in transaction security, usability perception, ease of use, and innovation of digital products as factors that can explain customer decisions to actively use digital banking.

The results of the research are expected to provide practical and academic benefits. For BCA, the research findings can be used as a basis for developing strategies to increase the use of digital banking. For academics, this study adds to the study of the adoption of financial technology in the context of Indonesian banking. For regulators, the results can be an illustration of the importance of digital transaction literacy and security. For the public, this research can strengthen the understanding that digital banking services have benefits, but they still need to be used with good security awareness.

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) is a model introduced by Davis (1989) to explain individual acceptance of technology. The core of this model lies in two user

assessments, namely perceived usefulness and perceived ease of use. Perceived usefulness is related to the view that technology is beneficial to the user's work or activity, while perceived ease of use is related to the belief that technology can be learned and operated without undue difficulty.

In digital banking services, TAM is relevant because the customer's decision usually starts from a simple assessment: whether the application is useful and whether the application is easy to use. If digital banking is considered to be able to speed up transactions, save time, and reduce dependence on branches, then the likelihood of usage will increase. On the other hand, if the features are considered confusing or the benefits are not felt, customers are less likely to use the service regularly. Thus, the construct of usability and convenience is the basis for reading the behavior of digital banking adoption.

This research not only uses the two main constructs of TAM, but also adds three variables that are in accordance with the character of digital banking, namely digital literacy, trust in transaction security, and digital product innovation. Digital literacy describes the readiness of customers to understand application features. Security trust is necessary because digital services are concerned with funds, identities, and personal data. Meanwhile, digital product innovation shows the extent to which banks present value-added features such as chatbots, fintech integration, and real-time notifications. The combination of these variables is used to explain the adoption of digital banking at BCA Regional Office 2 Semarang.

Digital Literacy to Digital Banking Adoption

In this study, digital literacy is interpreted as the ability of customers to use digital devices and information in financial activities. These capabilities include understanding application features, the ability to find service information, and awareness of digital transaction risks (Rahi et al., 2021). Martins et al. (2022) found that users who have better digital skills tend to be more confident when using digital banking services. Similar findings are also explained by Alalwan et al. (2018), namely that digital literacy helps users understand security features so that trust increases. Nguyen et al. (2020) added that education from banks can accelerate customers' understanding of the benefits of digital banking.

In the Indonesian context, digital literacy still needs to be considered because not all customer segments have the same habits in using financial technology. Pratama et al. (2023) show that a limited understanding of digital services can hinder the use of digital banking in certain groups. Therefore, banks still need to conduct education that is easy to understand so that customers are able to use digital features safely and independently.

H1: Digital literacy has a positive effect on the adoption of digital banking.

Trust in Transaction Security for Digital Banking Adoption

Trust in transaction security is an important basis for using digital banking services because banking transactions involve funds and personal data. Chen & Chang (2020) show that the perception of security risks can influence users' decisions in adopting digital banking. This means that when customers consider the bank system to be safe, secure, and reliable, they are more likely to use digital services.

Luo et al. (2021) explain that the use of two-factor authentication and encryption can strengthen users' sense of security. Kim et al. (2020) also emphasized the importance of security information disclosure because customers need to understand how their data is

protected. If banks are able to explain the protection mechanism in clear language, users' trust in digital services can increase.

In Indonesia, the issue of digital security is still one of the reasons why customers are cautious in using digital banking. Rahman & Nugroho (2022) stated that data leaks and the increase in cybercrime can reduce public confidence in digital financial services. Therefore, banks need to not only strengthen security systems, but also communicate these protections consistently to customers.

H2: Trust in transaction security has a positive effect on the adoption of digital banking.

Perception of Usability for Digital Banking Adoption

In the TAM framework, usability perception shows the extent to which users judge that the technology provides real benefits. In digital banking, these benefits can be in the form of faster transactions, access to services without having to come to a branch office, and ease of managing personal financial activities. These variable indicators include transaction acceleration (Venkatesh et al., 2016), flexibility of access (Alalwan et al., 2022), assistance in financial management (Susanto et al., 2023), and increased control over financial activities (Nguyen et al., 2024).

Several studies show that usability perception is related to the intention to use digital banking. Alalwan et al. (2022) found that users in Southeast Asia are more likely to accept digital services when they see the practical benefits. Susanto et al. (2023) emphasized that personal finance management features can strengthen the use value of applications. Nguyen et al. (2024) also show that the practical benefits of digital banking encourage sustainable use, particularly in groups of users who are familiar with technology.

H3: Perception of usability has a positive effect on the adoption of digital banking.

Ease of Use of Digital Banking Applications for Digital Banking Adoption

Ease of use indicates the extent to which the application is considered simple for users to understand and run. In TAM, easy-to-use technology will be easier to accept because users don't feel burdened when learning new features. Venkatesh et al. (2016) affirm that clear interface design, simple transaction flows, and easy-to-find navigation can improve the convenience of digital banking users.

Research by Wang et al. (2020) on digital banking users in the United States shows that ease of use is related to regular use. Pratama et al. (2023) also explained that navigation, accessibility, and clarity of features are important elements in building a user experience. In the Indonesian context, the ease of application remains important because some people are still in the stage of adapting to digital financial services.

H4: The ease of use of digital banking applications has a positive effect on the adoption of digital banking.

Digital Product Innovation and Digital Banking Adoption

Digital product innovation can make banking services feel more relevant to customer needs. Wang et al. (2020) mentioned that features such as chatbots, service personalization, and new transaction technologies can improve the user experience. If innovation is felt to be helpful, customers not only use the app for basic transactions, but also see it as part of their daily financial management.

Oliveira et al. (2019) show that the integration of new technologies, including artificial intelligence and data utilization, can strengthen the acceptance of digital services. Features like automated notifications and personalized financial recommendations can make services feel more convenient. Thus, innovation acts as a differentiator that can increase the value of services compared to basic transaction features.

Phan et al. (2021) found that digital banking innovations in Southeast Asia, especially those related to the security, efficiency, and integration of digital wallets, can improve customer engagement. The findings show that innovations that are considered beneficial will strengthen users' interest in switching and staying using digital banking services.

In Indonesia, competition between conventional banks and digital banks makes service innovation even more important. Rahman & Nugroho (2022) explained that the use of AI and integration with the fintech ecosystem can increase customer convenience and loyalty. Therefore, innovation is not only complementary, but can also be a strategy to strengthen the adoption of digital banking.

H5: Digital product innovation has a positive effect on the adoption of digital banking.

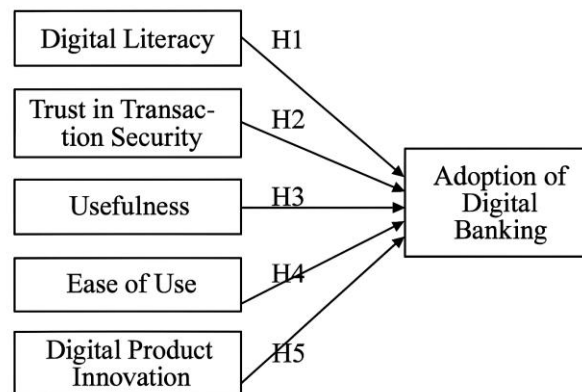


Figure 1. Research Model

METHOD

This study used a quantitative design with a survey method. The research population is BCA Regional Office 2 Semarang customers who have used digital banking services. The selection of respondents was carried out purposively with the criteria of an active user for at least six months, so that respondents are considered to have enough experience to assess digital banking services. The determination of the number of samples refers to Hair et al. (2014), which is a minimum of five to ten times the number of indicators. The research model has 18 indicators consisting of three indicators for each variable: digital literacy, trust in transaction security, perception of usability, ease of use, digital product innovation, and digital banking adoption. With a minimum limit of five indicators, the minimum sample requirement is $18 \times 5 = 90$ respondents. This study obtained 92 respondents, so that the number met the minimum criteria.

Primary data were obtained through questionnaires with a Likert scale of 1-5. The instrument is used to measure five independent variables and one dependent variable. Data processing was carried out by Structural Equation Modeling based on Partial Least Squares (SEM-PLS). The validity of the construct is evaluated through Confirmatory Factor Analysis (CFA), while the consistency of the instrument is seen through Cronbach's Alpha.

TAM was chosen because this model directly explains the acceptance of technology at the individual level. The focus of this research is on customers as users of digital services, so TAM is considered more appropriate than UTAUT which is generally broader and often used in organizational contexts. Through TAM, research can assess how users' perceptions of the benefits and ease of service affect adoption decisions.

Digital Literacy (X1) describes the readiness of customers to utilize digital devices for banking activities. The indicators include the ability to use smartphones or laptops, understanding of digital banking features such as transactions through BCA Mobile, and awareness of risks when using digital services. Customers with better digital literacy generally have a higher sense of confidence in using digital banking (Rahi et al., 2021; Hung et al., 2022).

Trust in Transaction Security (X2) shows the customer's confidence that their transactions, funds, and personal data are protected when using digital banking. The indicators used include digital risk perception, trust in security mechanisms such as OTP and encryption, and transparency of security information from banks. The stronger the customer's trust, the greater their chances of using digital banking services (Chen & Chang, 2020; Rahman & Nugroho, 2022).

Usability Perception (X3) measures customer assessment of the benefits of digital banking in financial activities. The indicators include ease of transactions, time efficiency, and service benefits in helping with financial management. If these benefits are real, customers tend to have a stronger intention to continue using digital banking (Davis, 1989; Venkatesh & Davis, 2000; Oliveira et al., 2019).

Ease of Use (X4) is related to the customer's perception of the ease of operating digital banking applications. Indicators include ease of understanding of the display, clarity of navigation, accessibility of features, and system instructions and feedback. Easy-to-use applications can lower barriers to use and improve customer comfort (Davis, 1989; Wang et al., 2020).

Digital Product Innovation (X5) explains customer perception of new features and additional benefits in digital banking services. The indicators include AI chatbots, integration with fintech services such as e-wallets or investments, and real-time transaction notifications. Innovations that are considered relevant can strengthen customers' interest in using digital services in a sustainable manner (Oliveira et al., 2019; Phan et al., 2021).

Digital Banking Adoption (Y) describes the behavior of customers using digital banking services. These variables are measured through frequency of use, satisfaction with the service, intention to continue using, and willingness to recommend the service to others (Zhao et al., 2021; Pratama et al., 2023).

The analysis stage was carried out with SmartPLS 3 through two main evaluations. First, the outer model is used to assess measurement quality through outer loading, Average Variance Extracted (AVE), cross loading, Cronbach's Alpha, and Composite Reliability. Second, the inner model is used to see the ability of independent variables to explain dependent variables through R-square. The hypothesis test was carried out by bootstrapping, and the hypothesis was declared acceptable if the T-statistic was greater than 1.96 and the p-value was less than 0.05.

RESULTS AND DISCUSSION

Respondent Description

This study uses data from 92 BCA Regional Office 2 Semarang customers who have experience using digital banking services.

Table 1. Characteristics of Respondents

Variable	Quantity		Total
	n	%	N (%)
Gender			
Male	39	42.4	92 (100)
Women	53	17.6	
Age (Years)			
20-29	34	37	92 (100)
30-39	42	45.7	
40-49	15	16.3	
50-59	1	1.1	
Education			
D3	14	15.2	92 (100)
S1	37	40.2	
S2	11	12	
S3	2	2.2	
SMA	28	30.4	
Jobs			
Housewives	14	15.2	92 (100)
Private Employees	24	26.1	
Student/Student	6	6.5	
CIVIL	21	22.8	
SERVANT/TNI/POLRI	27	29.3	
Self-employed			

Source: Primary data processing (2026)

Based on Table 1, the respondents consisted of men and women. Female respondents amounted to 53 people or 57.6%, while male respondents amounted to 39 people or 42.4%. In terms of age, the 30–39-year-old group was the largest group with 42 respondents or 45.7%. The next group was 20-29 years old as many as 34 respondents or 37.0%, 40-49 years old as many as 15 respondents or 16.3%, and 50-59 years old as 1 respondent or 1.1%. Thus, most of the respondents were under the age of 39.

Judging from the last education, S1 graduates are the largest group, namely 37 respondents or 40.2%. Respondents with high school education amounted to 28 people or 30.4%, D3 as many as 14 people or 15.2%, S2 as many as 11 people or 12.0%, and S3 as many as 2 people or 2.2%. In terms of employment, the most self-employed group is 27 people or 29.3%, followed by private employees 24 people or 26.1%, PNS/TNI/POLRI 21 people or 22.8%, housewives 14 people or 15.2%, and students/students 6 people or 6.5%. Based on the length of use, the majority have used digital banking for 3-4 years, namely 38 respondents or 41.3%. The other group used 22 respondents for 1-2 years, 12 respondents for 6-12 months, 11 respondents for 5-6 years, and 9 respondents for more than 6 years.

Variable Description

Descriptive analysis was used to read the tendency of respondents' answers on each indicator. The mean value is interpreted on a Likert scale of 1-5, which is 1.00-1.80 very low;

1.81-2.60 low; 2.61-3.40 moderate; 3.41-4.20 high; and 4.21-5.00 is very high (Ghozali & Latan, 2020). The descriptive discussion began with the digital literacy variable (X1).

Table 2. Respondents' Perceptions of Digital Literacy (X1)

No	Statement	Average
1	I understand the use of digital banking features such as transfers and payments	4.25
2	I can find information about the functions of the digital banking application independently	4.21
3	I feel that I am able to use digital banking technology well	4.21
Average		4.22

Source: Primary data that researchers have processed, 2026

In the digital literacy variable (X1), the average respondent answer was 4.22, so it was in the very high category. The indicator with the highest score is X1.1 of 4.25 regarding the understanding of the use of digital banking features. Meanwhile, X1.2 and X1.3 have a value of 4.21. These results show that respondents in general are able to understand features, seek information, and use digital banking technology well.

The results of respondents' assessment of transaction security trust (X2) are summarized in Table 3.

Table 3. Respondents' Perception of Trust in Transaction Security (X2)

Yes	Statement	Average
1	I believe that transactions through BCA digital banking are protected securely	3.93
2	I believe my personal data is safeguarded by the bank's security system	3.76
3	I consider that banks have reliable security mechanisms in digital banking services	3.91
Average		3.87

Source: Primary data that researchers have processed, 2026

Trust in transaction security (X2) has an average of 3.87 and is in the high category. The highest value is found in X2.1 at 3.93, while the lowest value is found in X2.2 at 3.76. These findings show that customers already have confidence in digital banking security, but personal data protection is still an aspect that needs to be strengthened.

A descriptive summary for the usability perception variable (X3) is shown in Table 4.

Table 4. Respondents' Perceptions of Usability Perceptions (X3)

Yes	Statement	Average
1	Digital banking helps my transactions get done faster	4.08
2	Digital banking makes my banking activities more efficient	4.11
3	I feel the benefits of digital banking in my financial routine	4.27
Average		4.15

Source: Primary data that researchers have processed, 2026

The usability perception variable (X3) obtained an average of 4.15 so it was in the high category. The largest value is at X3.3 at 4.27, while the lowest value is at X3.1 at 4.08. This means that respondents feel the benefits of digital banking, especially in supporting financial routines, although the speed of transaction completion can still be improved.

Table 5 presents descriptive results regarding the ease of use of digital banking applications (X4).

Table 5. Respondents' Perception of Ease of Use (x4)

Yes	Statement	Average
1	The appearance of the digital banking application is easy for me to understand	3.78
2	In-app feature navigation is easy to follow and clear	3.74
3	I was able to learn digital banking services without much additional help	3.55
Average		3.69

Source: Primary data that researchers have processed, 2026

Ease of use (X4) earns an average of 3.69 and belongs to the high category. The indicator with the highest value is X4.1 of 3.78, while the lowest value is X4.3 of 3.55. This result illustrates that the application is considered quite easy to understand, but there is still room for improvement so that customers can learn about the service without additional assistance.

Descriptive results regarding digital product innovation (X5) are shown in Table 6.

Table 6. Respondents' Perceptions of Digital Product Innovation (X5)

Yes	Statement	Average
1	The AI chatbot feature helps me obtain information on digital banking services	3.08
2	Integration with fintech services such as e-wallets makes my transactions easier	4.30
3	Real-time transaction notifications help me monitor my financial activity	4.61
Average		4.00

Source: Primary data that researchers have processed, 2026

Digital product innovation (X5) showed an average of 4.00, so it was in the high category. Real-time notifications on X5.3 received the highest score, at 4.61, while AI chatbots on X5.1 received the lowest score, at 3.08. This difference indicates that customers really appreciate features that are immediately beneficial, while chatbot features still need to be refined to be more useful.

The assessment of the digital banking adoption variable (Y) is presented in Table 7.

Table 7. Respondents' Perceptions of Digital Banking Adoption (Y)

Yes	Statement	Average
1	I regularly transact through BCA digital banking	3.84
2	I intend to continue using BCA's digital banking in the future	3.78
3	I am willing to recommend BCA digital banking to my family or friends	3.78
Average		3.80

Source: Primary data that researchers have processed, 2026

Digital banking adoption (Y) has an average of 3.80 and is in the high category. The Y.1 indicator obtained the highest score of 3.84, while Y.2 and Y.3 were 3.78 respectively. Thus, respondents tend to already use digital banking, but the intention of continuous use and willingness to recommend services can still be improved.

Testing Measurement Model (*Outer Model*)

An evaluation of the outer model is carried out to ensure that the indicators used are really able to measure the research construct. Through this stage, the quality of the instrument is assessed before the relationships between variables are tested on the structural model.

Convergent Validity Test

The indicator is considered to be valid convergently if the outer loading is more than 0.7 and the AVE exceeds 0.5 (Ghozali & Latan, 2020). In Table 8, all indicators show outer loading above the minimum limit. The Digital Banking Adoption variable (Y) has an outer loading range of 0.967-0.984 with an AVE of 0.953. Digital Product Innovation (X5) had the lowest value among other variables, namely outer loading of 0.727-0.929 and AVE 0.723, but still met the criteria. Other variables are also at adequate values, namely Digital Literacy (X1) with an outer loading of 0.984-0.990 and AVE of 0.975; Trust in Transaction Security (X2) with outer loading 0.819-0.918 and AVE 0.757; Usability Perception (X3) with outer loading 0.902-0.957 and AVE 0.881; and Ease of Use (X4) with an outer loading of 0.949-0.970 and AVE of 0.915. Based on these results, all constructs are declared to meet the convergent validity.

Table 8. Convergent Validity Test

Variable	Item	Outer Loading	AVE	Remarks
Digital Literacy (X1)	X1.1	0,990	0.975	Meet
	X1.2	0,989		Meet
	X1.3	0,984		Meet
Trust in Transaction Security (x2)	X2.1	0,819	0.757	Meet
	X2.2	0,918		Meet
	X2.3	0,871		Meet
Usability Perception (X3)	X3.1	0,957	0.881	Meet
	X3.2	0,955		Meet
	X3.3	0,902		Meet
Ease of Use of Digital Banking Application (X4)	X4.1	0,949	0.915	Meet
	X4.2	0,970		Meet
	X4.3	0,950		Meet
Digital Product Innovation (X5)	X5.1	0,727	0.723	Meet
	X5.2	0,929		Meet
	X5.3	0,881		Meet
Adopsi Digital Banking (Y)	Y.1	0,977	0.953	Meet
	Y.2	0,984		Meet
	Y.3	0,967		Meet

Source: Primary data processing with SmartPLS 3 software (2026)

Discriminating Validity Test

The validity of the discriminator is evaluated through cross loading values. An indicator should have the highest value on the construct it measures compared to other constructs. Referring to Ghozali & Latan (2020), a cross loading value above 0.7 indicates good fulfilment of the criteria. Based on Table 9, each indicator has the highest loading on its own construct. Thus, each variable in the model can be adequately distinguished from the others.

Tabel 9. Cross Loading Factors

	X1	X2	X3	X4	X5	Y
X1.1	0,990	0,427	0,854	0,868	0,921	0,843
X1.2	0,989	0,426	0,850	0,866	0,906	0,840
X1.3	0,984	0,370	0,832	0,871	0,904	0,810
X2.1	0,393	0,819	0,465	0,241	0,353	0,552
X2.2	0,305	0,918	0,497	0,203	0,331	0,551
X2.3	0,380	0,871	0,504	0,254	0,399	0,556
X3.1	0,753	0,581	0,957	0,689	0,757	0,766
X3.2	0,725	0,600	0,955	0,664	0,749	0,746
X3.3	0,914	0,413	0,902	0,866	0,903	0,844
X4.1	0,826	0,272	0,793	0,949	0,826	0,754
X4.2	0,840	0,256	0,766	0,970	0,854	0,712
X4.3	0,857	0,240	0,719	0,950	0,901	0,713
X5.1	0,574	0,232	0,571	0,592	0,727	0,563
X5.2	0,909	0,485	0,851	0,916	0,929	0,858
X5.3	0,825	0,303	0,741	0,744	0,881	0,721
Y.1	0,822	0,588	0,805	0,748	0,823	0,977
Y.2	0,826	0,640	0,820	0,749	0,855	0,984
Y.3	0,817	0,634	0,837	0,730	0,824	0,967

Source: Primary data processing with SmartPLS 3 software (2026)

Reliability Test

Reliability is assessed through Composite Reliability and Cronbach's Alpha. The instrument is considered reliable if both sizes are above 0.7 (Ghozali & Latan, 2020). The results in Table 10 show that all variables meet this limit. This means that the question item has good internal consistency and is suitable for advanced testing.

Tabel 10. Cronbach's Alpha dan Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Remarks
X1	0,987	0,992	Meet
X2	0,839	0,903	Meet
X3	0,932	0,957	Meet
X4	0,953	0,970	Meet
X5	0,805	0,886	Meet
Y	0,976	0,984	Meet

Source: Primary data processing with SmartPLS 3 software (2026)

Structural Model Testing (*Inner Model*)

Internal model evaluation was used to read the strength of relationships between latent variables according to the theoretical framework (Ghozali, 2021). In this study, the evaluation was carried out through R-square and F-square. R-square shows the model's ability to explain the adoption of digital banking, while F-square shows the contribution of each exogenous variable to the endogenous variable.

The R-square value describes how much changes in the dependent variable can be explained by the independent variables in the model. The interpretation categories used were strong, medium, and weak, with a reference of 0.75; 0.50; and 0.25 (Ghozali & Latan, 2020).

Table 11. Coefficient of Determination (R²)

	<i>R Square</i>
Adopsi Digital Banking	0,841

Source: Primary data processing with SmartPLS 3 software (2026)

Based on Table 11, the R-square value for Digital Banking Adoption is 0.841. This value shows that digital literacy, trust in transaction security, usability perception, ease of use, and digital product innovation together are able to explain 84.1% of the variation in digital banking adoption. The remaining 15.9% was explained by other factors that were not included in the research model.

F-square is used to see how much effect each exogenous variable has on the endogenous variable. Values of 0.02-0.15 indicate a small effect, 0.15-0.35 indicate a moderate effect, and values above 0.35 indicate a large effect (Latan and Ghozali, 2020).

Table 12. f-Square Test Results (f²)

No.	Hypothesis	Nilai f-Square	Remarks
1	Digital Literacy -> Adopsi Digital Banking	0,044	Weak
2	Trust in Transaction Security -> Adoption of Digital Banking	0,367	Strong
3	Perception of Usability -> Adoption of Digital Banking	0,010	Very weak
4	Ease of Use -> Digital Banking Adoption	0,004	Very weak
5	Digital Product Innovation -> Digital Banking Adoption	0,175	Intermediate

Source: Processed primary data (2025)

Table 12 shows that trust in transaction security has a strong effect on the adoption of digital banking. Digital product innovation shows an intermediate effect, while digital literacy is on a weak effect. The perception of usability and ease of use is at a very weak effect. These findings reinforce that the security and innovation aspects are more dominant than other variables in explaining the behavior of digital banking adoption.

Hypothesis Testing

Hypothesis testing refers to p-values. The hypothesis is stated to be accepted if the p-value is less than 0.05 and rejected if the p-value is more than 0.05. Table 13 shows that Trust in Transaction Security (X2) and Digital Product Innovation (X5) is significant for Digital Banking Adoption, with p-values of 0.000 and 0.009, respectively. Therefore, H2 and H5 are accepted. In contrast, Digital Literacy (X1), Usability Perception (X3), and Ease of Use (X4) have p-values above 0.05, so all three are insignificant and H1, H3, and H4 are rejected.

Table 13. Direct Influence Hypothesis Test

Path	Original Sample	T Statistics	P Values	Remarks	Hypothetical Decision
Digital Literacy -> Adopts Digital Banking	0,238	1,736	0,083	Insignificant	H1 rejected
Trust in Transaction Security -> Adoption of Digital Banking	0,316	4,270	0,000	Significant	H2 accepted
Perception of Usability -> Digital Banking Adoption	0,095	0,728	0,467	Insignificant	H3 rejected
Ease of Use of Digital Banking Applications -> Digital Banking Adoption	0,063	0,474	0,635	Insignificant	H4 rejected
Digital Product Innovation -> Digital Banking Adoption	0,365	2,608	0,009	Significant	H5 accepted

Source: Primary data processing with SmartPLS 3 software (2026)

The results of the first test showed that H1 was rejected. Thus, digital literacy is not significant to the adoption of digital banking. This finding can be understood from the profiles of respondents, the majority of whom are under 39 years old. The age group of 20-29 years amounted to 34 respondents or 37.0%, while the age group of 30-39 years amounted to 42 respondents or 45.7%. Combined, 76 respondents or 82.7% were in the age group relatively close to digital technology. In addition, the average digital literacy of 4.22 indicates a very high category. This condition explains that the digital capabilities of respondents are relatively evenly distributed, so that they are no longer a strong differentiating factor in encouraging the adoption of BCA's digital banking. In this study, digital literacy functions more as a supporting prerequisite, not the main factor that determines the decision to use. These findings are in line with Jihan & Fatah (2023), who stated that the influence of literacy can weaken when users are at a good enough level of digital maturity.

The results of the second test showed that H2 was accepted. This means that trust in transaction security has a positive and significant influence on the adoption of digital banking. This finding is important because the average trust of 3.87 is still lower than digital literacy, perception of usability, and innovation of digital products, but it has proven to be significant. The lowest value is found in the personal data protection indicator, which is 3.76. This indicates that a sense of security, especially related to personal data and transaction risks, is still a concern for customers. In digital financial services, concerns about data leaks, fraud, and system failures can influence usage decisions (Tariq et al., 2024). Therefore, increasing trust through security education, transaction notifications, and fraud reporting mechanisms is an important step. These results support Elizabeth (2023) who explains that trust can reduce risk perception and increase intention to use digital transaction applications.

The results of the third test showed that H3 was rejected. This means that the perception of usefulness is not significant to the adoption of digital banking. Although TAM Davis (1989) places usability as an important factor in the acceptance of technology, the results of this study show a different context. For respondents, the basic benefits of digital banking such as transfers, payments, balance checks, and transaction recording are considered standard features. When such benefits have become a basic expectation, their existence is no longer the main reason to increase use. Sudarsono et al. (2022) and Rohmah et al. (2022) explain that in

mature technologies, usability perception can act as a hygiene factor: it is still necessary, but not strong enough to drive significant adoption.

The results of the fourth test showed that H4 was rejected. Ease of use is not significant to the adoption of digital banking. This finding can be attributed to the characteristics of respondents who are mostly used to using digital applications. For a group of users who already have technology experience, learning banking apps is no longer a big obstacle. Therefore, ease of use plays more of a role as a basic condition for services not to be abandoned, rather than as the main factor that increases adoption. These findings are in line with Laely et al. (2024) and Halida & Hwihanus (2024), who suggest that ease of use may be less dominant in users with high digital experiences.

The results of the fifth test showed that H5 was acceptable. Digital product innovation has a positive and significant effect on the adoption of digital banking. Features such as real-time notifications, integration with e-wallets, and chatbots can add value to the service as it provides a more practical experience for customers. Innovation is also a differentiator when basic digital banking features are widely available. However, descriptive results show that AI chatbots still get the lowest score compared to other innovation features. Therefore, BCA can improve the accuracy, responsiveness, and ease of use of chatbots so that the benefits are more felt. These findings support Abdurrahman (2025) and Shaikh & Amin (2025) who state that digital service innovation is able to increase perceived value and strengthen the adoption of financial technology.

CONCLUSION

This study concludes that the adoption of digital banking among BCA Kanwil 2 Semarang customers is mainly explained by trust in transaction security and digital product innovation. Both variables proved to be significant. In contrast, digital literacy, usability perception, and ease of use are insignificant. This condition shows that the majority of respondents are familiar with technology, digital capabilities and basic benefits of applications are no longer the main drivers. Customers are more concerned about the sense of security and added value of the digital features offered by banks. From the theoretical side, this study shows that the application of TAM in digital banking needs to be adjusted to the level of maturity of users. Classic constructs such as usability and ease of use are not always the dominant determinants when users have become accustomed to digital services. This study enriches the literature on technology adoption by showing that trust, security, and innovation of digital products can be more prominent factors in the context of modern digital banking. From a managerial perspective, BCA needs to prioritize increasing customer trust and developing service innovations. The average confidence of 3.87 indicates that the perception of security is already high, but not as strong as other variables. The personal data protection indicator that obtained a value of 3.76 needs to be a major concern. BCA can strengthen digital security education, explain data protection in easy-to-understand language, improve authentication, speed up transaction notifications, and provide simple fraud reporting channels. Branch offices and digital channels can be used to remind customers about OTP security, PINs, fraud modes, and quick steps when suspicious transactions appear. In the innovation aspect, BCA needs to maintain features that have been assessed well and improve features that are still low in value. Real-time notifications and fintech integrations need to be

continuously developed because the benefits are immediately felt by customers. Meanwhile, AI chatbots need to be improved in terms of accuracy of answers, response speed, and the ability to understand customer questions. Relevant innovations will strengthen the user experience, make digital banking services more practical, and encourage sustainable use. The limitation of this study lies in the scope of the sample that only took respondents from BCA Kanwil 2 Semarang customers. Therefore, the results of the study cannot be applied directly to all banks or entire regions. Each bank has different customer characteristics, brand strengths, application design, security policies, and innovation strategies. Thus, the results of this study can be an initial reference, but its application to other banks needs to be adjusted to their respective conditions. The next research is suggested using a broader object, for example comparing BCA with other banks, conventional banks with digital banks, or private banks with state-owned banks. Follow-up research can also expand the respondents' territory and add other variables such as risk perception, user experience, quality of digital services, loyalty, or transaction habits. The comparison approach between banks will provide a more comprehensive understanding of the driving factors for digital banking adoption in Indonesia.

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