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DEVELOPMENT OF TECHNOLOGY ACCEPTANCE MODEL (TAM) IN ANALYZING USER DECISIONS OF MOBILE BANKING SERVICES Wondr by BNI

Febryana Rudiyanto[1]*, Susi Astuti[2], Galuh Puspita Dewi[3], Hanif Wahib Hamdani[4]

[1-4] Department of Management, Universitas Putra Bangsa, Indonesia
*Email corresponding author: febryanarudiyanto78@gmail.com

Abstract

This study aims to analyze the level of acceptance of the Wondr by BNI Mobile Banking application in Indonesia by utilizing the Technology Acceptance Model framework. This model is used to assess the extent to which Perceived Ease of Use and Perceived Usefulness influence user decisions. As an extension of the model, the Perceived Security variable was also added to enrich the analysis of the factors influencing the decision to use the Wondr by BNI application. This research uses a quantitative approach with primary data as the main source. The sampling technique was carried out purposively on 150 respondents. The data was analyzed using the Partial Least Squares method, which is part of the Structural Equation Modeling approach. The results of the study show that Perceived Ease of Use and Perceived Security have an influence on Intention to Use, while Perceived Ease of Use also has an impact on Perceived Usefulness. In addition, Intention to Use has been shown to have an effect on Actual Use. However, Perceived Usefulness was not found to have a significant effect on Intention to Use

Keywords: Perceived Ease of Use, Perceived Usefulness, Perceived Security, Intention of Use, and Actual Use.

INTRODUCTION

The growth of technology has experienced very rapid development. This has changed various aspects of life, including the financial sector. Digitalization such as artificial intelligence, Internet of Things, and information and communication systems have accelerated banking services. Technological developments in the financial sector are currently increasingly widespread and bringing about significant changes. One of the biggest innovations to emerge is mobile banking, which allows financial transactions to be carried out practically via mobile devices.

This transformation shifts physical money as a means of cash payment to non-cash payments which are more efficient, safe and easily accessible. Digital payment systems that rely on interbank transfers or internal bank networks replace traditional methods that rely on cash (Tarantang et al., 2019). This opens up huge opportunities for banks to develop online channels and web-based platforms such as internet banking and mobile banking, which further expand the reach of financial services to the public (Wulandari et al., 2022).

The presence of mobile banking not only provides a sense of convenience for customers, but also contributes to increasing financial transactions by making it easier to access banking services that were previously difficult to reach, (Negarawati, 2023). The emergence of mobile banking has brought various innovations that facilitate access, efficiency, and security of financial services for more transparent transactions. In addition, the application of AI in analyzing data for faster and more accurate decision making. Mobile banking makes it easy for users to make financial transactions such as transfers, payments, and investments, just through a smartphone. With easy and practical access, it opens up opportunities for people in remote areas to enjoy banking services. Features like multi-layered security, real-time notifications, and personal financial management increase inclusion, efficiency, and convenience. In addition, banks can provide more personalized data-based services,

analyze customer behavior, and quickly adapt to market needs. This shows that banking continues to adopt digital technology to meet customer needs.

Bank Negara Indonesia is one of the largest state-owned enterprises in the banking sector in Indonesia and with BNI Mobile Banking they have made it easier for customers to access various financial services digitally, anytime and anywhere. The BNI Mobile Banking application allows customers to make transactions such as interbank transfers, bill payments, purchase credit or data packages, purchase tickets, and check balances more quickly and safely. In addition, the ease of use of BNI Mobile Banking lies in the user-friendly navigation display and advanced security features such as two-factor authentication to keep customer data and transactions safe

Tabel 1 State-Owned Bank Digital Transaction Data 2023

Company	Total Users	Number of Transactions	Transaction Value	Application
Bank Mandiri Tbk (BMRI)	23 Million	2.82 billion	Rp3,271 trillion	*Livin' by Mandiri*
Bank Negara Indonesia Tbk (BBNI)	16.3 Million	1.04 billion	Rp1,216 trillion	*BNI Mobile Banking*
Bank Rakyat Indonesia Tbk (BBRI)	31.6 Million	3.1 billion	Rp4,159 trillion	*BRImo*
Bank Tabungan Negara Tbk (BBTN)		486 Million	Rp592 billion	*BTN Mobile Banking*

Source: Annual Report of State-Owned Banks, 2023

Based on the table, it is recorded that in 2023, Bank BNI's digital transactions were in third place among other state-owned banks listed on the Indonesia Stock Exchange (IDX). BNI Mobile Banking is recorded to have 16.3 million users with a total transaction of 1.04 billion and a transaction value reaching IDR 1,216 trillion. BNI's placement in third place shows the challenges in expanding the use of mobile banking services among customers, even though this bank has a wide network and a solid reputation. In addition, the tight competition between other state-owned banks, such as BRI and Bank Mandiri, shows the importance of innovation and effective marketing strategies in attracting more users.

Therefore, to answer the ever-growing needs of customers and competition between state-owned banks, BNI launched a new application called Wondr by BNI. Wondr by BNI offers a variety of more complete and sophisticated features, ranging from daily financial transactions such as money transfers and bill payments, to more complex features such as financial planning, investment, and budget management, (Havida and Budianarya, 2024). The Wondr by BNI application comes with an attractive and interactive appearance, making it easier for customers to access financial services efficiently and enjoyably. Equipped with AI technology, this application provides personalized financial recommendations. Security features such as biometric authentication and multi-layered data protection ensure user convenience. This innovation is BNI's step to present a holistic digital banking solution that is in line with the financial needs of the community that continue to grow.

Despite offering many advantages, acceptance of Wondr by BNI varies among customers. Some users appreciate its convenience and advanced features, but others experience challenges in adapting to the new interface because they are used to using BNI Mobile Banking. This varied acceptance is certainly caused by several factors. In addition to convenience and usability, security is an important consideration in the decision to use this application. Acceptance of the Wondr by BNI application depends on the extent to which the application meets customer needs in terms of

function, convenience, and security. Perceptions of benefits, convenience, and security also influence user interest in trying and using the application.

One of the models often used in analyzing the acceptance of a system is the Technology Acceptance Model (TAM). With TAM, researchers can identify factors that influence the acceptance of new technology or systems, one of which is a digital banking application. This model emphasizes two factors, namely perceived usefulness and perceived ease of use. In addition, Perceived Security is another crucial factor that can influence a person's interest and user decision to use Wondr by BNI. These three factors are believed to influence customer interest and decision in using Wondr by BNI.

With TAM as an analysis framework, BNI can evaluate the extent to which the Wondr application meets user expectations, as well as identify areas that need improvement. A deep understanding of user perceptions and experiences will help BNI create a digital banking solution that is more holistic, secure, and meets the needs of today's customers.

Based on the background above, this research can be formulated as follows:

1. How does Perceived Ease of Use affect Perceived Usefulness?
2. How does Perceived Ease of Use affect Intention to Use of the Wondr by BNI application?
3. How does Perceived Usefulness affect Intention to Use of the Wondr by BNI application?
4. How does Perceived Security affect Intention to Use of the Wondr by BNI application?
5. How does Intention to Use affect the Decision to Use (Actual Use) of Wondr by BNI?

Based on the data processing that has been done, this study obtained the results that Perceived Ease of Use and Perceived Security are proven to influence the decision to use Wondr by BNI. Meanwhile, Perceived Usefulness does not influence the decision to use which is estimated because of the element of coercion to switch from BNI Mobile Banking to Wondr by BNI.

Theoretically, the TAM model can explain the factors that influence the use of Wondr by BNI, but Perceived Usefulness is not proven to be the main factor. It is recommended to add other variables that better reflect the decision to use. Then because this research covers the entire Indonesia, further research can be conducted in cities with the most Wondr users. In addition, considering the rapid development of Wondr by BNI, regulators (BI & OJK) need to tighten supervision through regulations to protect users from potential risks.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION

Technology Acceptance Model (TAM)

One of the models used in predicting individual acceptance of technology and its correlations including attitudes, beliefs, purposes of use, and how to use the technology is the Technology Acceptance Model (TAM) (Putri et al., 2023). The Technology Acceptance Model (TAM) was first developed by Fred Davis by providing a framework for understanding several factors that influence technology adoption. TAM emphasizes two main factors, Perceived Benefits and Perceived Convenience (Rahmawati et al., 2019). In addition, Perceived Security is also believed to be the reason someone accepts a technology.

Perceived Usefulness

Perceived Benefit is the extent to which a person feels that by using a system, it improves a person's performance (Irawati et al., 2020). Improving performance can be in the form of efficiency in completing a job that was previously done in a long period of time. According to Ernawati., (2020) Perception of Benefits can be measured through several indicators as follows :

a. Facilitate transactions
b. Speed up transactions
c. Provide more benefits after the transaction is completed
d. Provide a sense of security when making transactions

Perceived Ease of Use

According to Rahmat., (2019) Perceived Ease of Use is an individual's trust in the decision-making process when utilizing information technology including mobile banking. Nurparliana et.al., (2022) stated that ease of use consists of four indicators, namely:

a. Easy to learn
b. Easy to use
c. Clear and easy to understand
d. Become skilled

Perceived Security

In terms of mobile banking, security measures can occur through threats or misuse through unauthorized networks and transaction data through access obtained with false authentication to accounts (Panjaitan & Doli, 2023). According to Lubis (2023), there are several security indicators, namely :

a. Guaranteed security
b. Accurate information
c. Protecting customer data
d. Protecting transactions
e. Safe and comfortable when transacting
f. Security as expected

Intention to Use

Interest is a person's drive or attraction to a particular object, which makes him pay attention, search for, and try to achieve it. Interest arises from within, influenced by internal and external factors (Sulmi, 2021). According to Fariz (2021), interest encourages someone to focus and try hard, even making difficult tasks feel easier. So, interest is a feeling of attraction to an object, both living and non-living.

Things that can increase interest (Nasution et. al, 2022) :

a. Arousing curiosity about beauty and appreciation
b. Connecting with previous experiences
c. Providing opportunities to achieve optimal and perfect results

Decision to Use

The decision to use is the process by which consumers decide whether or not to use a product or service, based on certain considerations (Khalifah et al., 2021). In the context of services, this includes the selection and utilization of services offered by the company (Styarini & Riptiono, 2020). In general, the decision to use is influenced by factors such as rationality, needs, preferences, and previous experiences.

Mobile Banking

Mobile banking is an innovation in banking services based on information technology that allows customers to make financial and non-financial transactions through applications on mobile phones (Sihotang & Agustiawan, 2022; Riayu & Susanto, 2021). This service is present along with the development of technology and modern lifestyles, especially among generation Z, who need remote transaction access anytime and anywhere.

According to the Financial Services Authority (2018), mobile banking facilitates various transactions such as money transfers, bill payments, credit purchases, electricity tokens, and digital wallet top-ups. With easy-to-use features and guaranteed security, mobile banking supports convenience, speed, and efficiency of transactions for 24 hours without time and place restrictions, providing convenience for customers with high mobility.

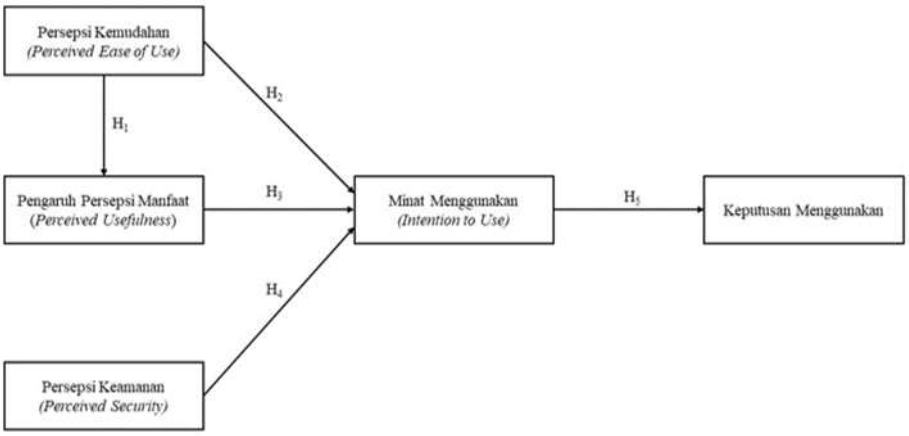

Figure 1. Model Empiris

H1: Perceived Ease of Use has an effect on Perceived Usefulness
H2: Perceived Ease of Use has an effect on Intention to Use mobile banking
H3: Perceived Usefulness has an effect on Intention to Use mobile banking
H4: Perceived Security has an effect on Intention to Use mobile banking
H5: Intention to Use has an effect on Decision to Use (Actual Use) Wondr by BNI

RESEARCH METHODS

The design of this study focuses on understanding how users accept and use technology. This study involved a survey using a questionnaire with a modified Likert scale that aims to overcome the weaknesses of the five-level scale. According to Lestari (2021), a sample is part of a population and has certain characteristics. The sample in this study was selected from the population to represent the entire subject to be studied. The specific requirements to be a sample of this study are BNI bank customers and have used Wondr by BNI. Data analysis in this study was tested using SEM (Structural Equation Modeling) with the PLS (Partial Least Square) method and using SmartPLS 3 as a measuring tool.

RESULTS AND DISCUSSION (Calibri Light 11, Bold, spasi 1,5, spacing before 12 pt, after 0 pt)

Tabel 1. Hypothesis Testing

Hypothesis	Description	Path Coefficient	p-value	Result
H_1	PEOU to PU	0.623	0.000	Supported
H_2	PEOU to IU	0.354	0.001	Supported
H_3	PU to IU	0.090	0.199	Not Supported
H_4	PS to IU	0.456	0.000	Supported
H_5	IU to AU	0.740	0.000	Supported

Source: Primary data processed, 2025

Based on table IV-11, the results show that H1, H2, H4, and H5 are supported or accepted because the p-value is ≤ 0.05. While H3 cannot be supported because the p-value is >0.05.

The first hypothesis states that Perceived Ease of Use has an effect on Perceived Usefulness in using Wondr by BNI. The test results with SmartPLS 3 show a path coefficient of 0.623 and a p-value of 0.000 (≤ 0.05), so the hypothesis is accepted. This means that the easier Wondr is to use, the higher the perception of its benefits for users. This finding is in line with research by Darma

(2019) and Nabila (2021), which states that perceived ease supports the perception of system usefulness.

The second hypothesis states that Perceived Ease of Use has an effect on Intention to Use in using Wondr by BNI. The results of the SmartPLS 3 test show a path coefficient of 0.354 and a p-value of 0.001 (≤ 0.05), so the hypothesis is accepted. This means that the easier the application is to use, the higher the user's interest in continuing to use it. This finding is in line with research by Darma (2019) and Teresia (2022) which shows that perceived ease can increase intention to use.

The third hypothesis states that Perceived Usefulness has no effect on Intention to Use Wondr by BNI. The results of the SmartPLS 3 test show a path coefficient of 0.090 and a p-value of 0.187 (> 0.05), so the hypothesis is not accepted. This means that even though users find the application useful, this does not affect their interest in using it. This is thought to be due to users' previous habits with BNI Mobile Banking, as well as the transition to Wondr which feels like a necessity, not a choice. This finding is in line with Purnamasari (2021) and Elok Irianing (2020) who stated that Perceived Usefulness does not always affect Intention to Use.

The fourth hypothesis states that Perceived Security has an effect on Intention to Use Wondr by BNI. The results of the SmartPLS 3 test show a path coefficient of 0.456 and a p-value of 0.000 (≤ 0.05), so the hypothesis is accepted. This means that the higher the user's sense of security towards the system, the greater their interest in using it. This finding is in line with Basrah Saidani's research (2022) which states that Perceived Security has an effect on Intention to Use.

The fifth hypothesis states that Intention to Use influences Actual Use of Wondr by BNI. The results of the SmartPLS 3 test show a path coefficient of 0.740 and a p-value of 0.000 (≤ 0.05), so the hypothesis is accepted. This means that the higher the user's interest, the more likely they are to actually use Wondr. This finding is in line with the research of Anouze & Alamro (2020) which states that Intention to Use influences Actual Use.

CONCLUSION

Based on the tests conducted, the results obtained show that Perceived Ease of Use and Perceived Security have an influence on Intention of Use which then Intention of Use has an influence on Actual Use. However, Perceived Usefulness has no influence on Intention of Use which may be due to the forced factor to switch to Wondr by BNI because BNI Mobile is projected to be removed. So Perceived Usefulness is felt to have no real influence on Intention of Use and Actual Use.

Research on the influence of Perceived Ease of Use, Perceived Usefulness, and Perceived Security on Intention to Use and Actual Use on the Wondr by BNI application has limitations, including focusing only on Wondr users and not covering other factors that may be more influential such as perceived trust and perceived risk. In addition, although many studies have developed the TAM model, this study only covers two main variables, so it does not fully describe the factors that influence usage decisions.

Theoretically, this research is expected to be a source of information and reference for further research related to the Technology Acceptance Model (TAM) in the use of mobile banking. In addition, it can also add literature to libraries and research in the field of digital banking. This research is also expected to contribute to the development of TAM theory through studies on the Wondr by BNI application, especially on the factors of Perceived Ease of Use, Perceived Usefulness, and Perceived Security.

Practically, this research is an input for the bank to improve the performance and acceptance of the Wondr by BNI application in the long term. In addition, to improve the experience of using the Wondr application to be more efficient, safe, and according to financial needs. This study also provides insight into the factors that influence the acceptance of mobile banking and recommendations for developing better applications. Then to increase knowledge and references for the development of studies in the field of information technology and digital banking.

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