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Digital Bank User Acceptance Analysis Using The Extended Technology Acceptance Model

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Abstrak

The Covid-19 pandemic requires banks to provide electronic payments, carry out digital transformation and open up opportunities for financial technology-based companies. Digital transformation in banking requires reliable integration and security between systems. Otherwise, it can become a gap for cyber attacks. Cyber security in banking includes Confidentiality, Integrity, Availability, Non-repudiation, and Authentication. Jenius is the first digital bank in Indonesia that makes it easy for customers to complete transactions and manage finances digitally without going to the bank. This bank was once a victim of a cyber attack that attacked customers with material losses of around 50 billion and non-material losses in the form of decreased bank credibility. Digital Bank also has problems that often occur, such as failing to identify customers, differences in facts on proof of transfer, frequent force close applications, etc. This study aims to determine the effect of security on behavioral intention and other factors that influence behavioral choice in this digital bank using the modified Technology Acceptance Model (TAM) model. The variables used are Confidentiality, Integrity, Availability, Non-repudiation, Authentication, Perceived Security, Perceived usefulness (PU), Perceived Trust, Perceived Ease of Use (PEoU), and Behavioral Intentions. This research uses quantitative methodology by distributing questionnaires to 200 sample customers. The measurement results show that more than half variables are accepted. The four rejected variables are the Confidentiality, Availability, and Non-repudiation variables to perceived security and the Perceived Ease of Use (PEoU) variable for the trust variable. Future research can add several external variables and review the rejected variables.

Keywords: Electronic Payments, Digital Transformation, Technology Acceptance Model, Digital Bank.

1. Introduction

The Covid-19 pandemic is one of the factors accelerating digital transformation in banking in Indonesia. The pandemic has contributed to the habit of financial transactions, which used to be mostly in cash, and has changed to a non-cash form. In other words, electronic payments and payment cards have become more critical. Based on survey results from Mckinsey, there has been a 21% increase in Indonesians using digital banking, from 57% to 78% in 2017. The growth in digital banking is also in line with the rise in the value of transactions and the amount of electronic money that has increased dramatically in the last five years [1].

In this era of disruption, banks must be able to carry out digital transformation to win competition from other financial services sectors. Digital transformation gives rise to better technological products that generate more profits. In other words, Indonesia's banking industry has undergone rapid digitalization due to the Covid-19 pandemic, characterized by a shift from cash to non-cash transactions that have caused significant changes in financial behavior in society [2].

One form of digital transformation in banking is Jenius Digital Bank, a digital bank launched by Bank BTPN in August 2016. Jenius Digital Bank is the first digital bank in Indonesia that makes it easier for customers to complete transactions and manage their financial lives digitally without going to the bank by providing active digital financial services through smartphone applications with internet-enabled features. Jenius Digital Bank has succeeded in attracting public attention because it has made a breakthrough in its features and services, as evidenced by the large and significant increase in users yearly [3].

Digital transformation in banking does not only occur at BTPN; many other conventional banks have also begun to launch their digital banks, such as the Blu by BCA and Livin' by Mandiri applications. Digital transformation in banking has also given birth to new Digital Bank institutions, such as Line Bank, Jago Bank, Neo Bank, etc. Although Jenius Digital Bank has many competitors, Jenius Bank remains superior to others [4]. This is reinforced

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by data obtained that the most popular digital bank in the community is Bank Jenius, and Bank Jenius is the digital bank with the most assets [5].

The existence of digital transformation in banking requires a measurement to determine the success of the implementation of new technology from the user's perspective. User acceptance is an essential factor affecting the successful implementation of new technology products, so the factors that determine acceptance can determine the success or failure of the performance [6]. The Technology Acceptance Model (TAM) is one method of measuring user acceptance. Based on the effect of at least two components, namely perceived utility and perceived ease of use, TAM is a model to explain and forecast user attitudes toward a technology. Davis originally put out the technology acceptance model (TAM) in 1989, and ever since then, TAM has become a well-crafted model that is robust, strong, and efficient in being a model for predicting user acceptance. TAM is a model to explain and predict user attitudes toward a new technology that has existed since 1989 and is still used today with some modifications [7].

Perceived security variables often added to the TAM method have been widely implemented by other researchers [8] [9]. According to specific study findings, security is a multi-dimensional construct built on several aspects, including confidentiality, integrity, availability, non-repudiation, authentication, and privacy [10] [11]. Information systems practitioners and researchers usually concur on this point [12]. Some examples of studies that divide perceived security into several multi-dimensional constructs are Edgar and Manz, who found CIAAN (confidentiality, integrity, availability, authentication, and non-repudiation) [13]. Who classified it into non-repudiation, confidentiality, integrity, and availability, and Belanger et al. Who divided it into non-repudiation, confidentiality, integrity, availability, authentication, and privacy [14]. According to the study, perceived security is more important than other factors in influencing people's decision to utilize a website, according to Belanger et al. This study aims to determine the effect of security on behavioral intention and other factors that influence behavioral choice in the Jenius digital bank using the modified Technology Acceptance Model (TAM) model.

2. Research Method

This study used a quantitative approach and a sequential research strategy. This research approach involves data collection, processing, and analysis, followed by interpretation of findings that lead to recommendations. Research data collection includes research studies and observations by reviewing and collecting data related to the research object. Research data processing includes proposing models, making research hypotheses, preparing and testing research instruments (pilot studies), and determining research populations and samples. Preparation of research tools is the steps taken by the author to create a survey in the form of a questionnaire through google forms and distribute the questionnaire indirectly (online) to Jenius digital bank customers through social media. After the research instrument already exists, a Pilot Study of the research instrument is carried out.

3. Result and Discussion

A pilot study has been conducted to evaluate the reliability, validity, and level of importance of the study's hypotheses' findings and the employed questionnaire. Before the data may be accepted, the reliability test in this research to determine complete reliability must be greater than 0.700, and the validity test to determine the AVE value is more significant than 0.500. The Consistency Reliability (CR) test results in this study show that all variables have a value above 0.7, so it can be concluded that all variables have valid requirements to be used as a model in this study. The average variance extracted (AVE) test results in this study indicate that all variables have a value above 0.5, so it can be concluded that all variables have valid conditions to be used as models in this study. The path coefficient (β) test results show that the H1 relationship between confidentiality (C) → Perceived Security (PS) has a value below 0.1, namely -0.004, which means that the confidentiality variable (C) does not have a significant effect on the Perceived Security (PS) variable. The t-test results also show that the H1 relationship between confidentiality (C) → perceived security (PS) is lower than 1.96, so 0.077 so the hypothesis is rejected. The f2 and q2 values also indicate that the effect size of H1 is small. The confidentiality variable related to guaranteeing that customer data and information is not disclosed to unauthorized parties does not significantly affect customer confidence that their data is safe. The attributes of the confidentiality dimension include information theft and security, misuse and customer ID security. The confidentiality dimension owned by Jenius does not affect customer confidence in protecting their data in line with previous research which states that confidentiality has no significant effect on Perceived Security.

The results of the path coefficient (β) test show that the H2 relationship between integrity (I) → perceived security (PS) has a value above 0.1, namely 0.540, which means that the integrity (I) variable has a significant influence on the perceived security (PS) variable. The t-test results also show that the H1 relationship between integrity (I) → perceived security (PS) has a value higher than 1.96, namely 6.575 so the hypothesis is accepted. The f2 and q2

values indicate that the effect size of H2 is large and medium, respectively. The integrity variable (I) relates to the customer's assessment of the data stored in Bank Jenius that is consistent, unchanged and undamaged has a significant effect on customer confidence that their data and information are safe. The attributes of the integrity (I) dimension include the accuracy, suitability and correctness of customer data and information. The integrity dimension (I) owned by Jenius significantly affects the security of their data and information in line with previous research which states that Integrity is part of perceived security and has a significant effect on perceived security.
The path coefficient (β) test results show that the H3 relationship between availability (A) → perceived security (PS) has a value below 0.1, namely 0.063, which means that the availability variable (A) does not have a significant effect on the perceived security (PS) variable. The t-test results show that the H1 relationship between integrity (I) → perceived security (PS) also has a value lower than 1.96, namely 1.025, so the hypothesis is rejected. The f2 and q2 values also indicate that the effect size of H3 is small. The availability variable (A) relates to the ability of bank customers to access data and information about Bank Jenius services reliably, quickly and efficiently and has no effect on customer confidence that their data and information are safe. The availability dimension (A) attributes include the availability of systems, databases, networks, and ATMs from banks. The Availability (A) dimension owned by Jenius significantly affects the security of their data and information, in line with previous research that availability has no significant effect on Perceived Security.
The path coefficient (β) test results show that the H3 relationship between non-repudiation (NR) → perceived security (PS) has a value below 0.1, namely 0.008, which means that the non-repudiation (NR) variable has no significant effect on the perceived security (PS) variable. The t-test results show that the H4 relationship between non-repudiation (NR) → perceived security (PS) also has a value lower than 1.96, namely 0.139, so the hypothesis is rejected. The f2 and q2 values also indicate that the effect size of H4 is small. The non-repudiation (NR) variable relates to the system's ability to ensure that transactions sent by customers and accepted by the system to ensure that the company cannot later reject completed transactions have no effect on customer confidence that their data and information are safe. The attributes of the non-repudiation (NR) dimension include the use of ID cards as digital signatures during Jenius Bank registration, regulations that support the use of ID cards as a means of identity, and bank identity that can be trusted so that customers can provide their identity safely. The non-repudiation (NR) dimension owned by Jenius significantly affects the security of their data and information, in line with previous research, which states that non-repudiation is not always related to perceived safety.
The path coefficient (β) test results show that the H5 authentication (Au) → perceived security (PS) relationship has a value above 0.1, namely 0.313, which means that the authentication (Au) variable has a significant influence on the perceived security (PS) variable. The t-test results also show that the H5 relationship between authentication (Au) → perceived security (PS) has a value higher than 1.96, namely 3.224 so that the hypothesis is accepted. The f2 and q2 values indicate that the effect size of H5 is medium and small, respectively. The authentication variable (Au) relates to the ability of Jenius bank to identify whether the customer who is accessing Jenius Bank is the right customer has a significant effect on customer confidence that their data and information are safe. The attributes of the authentication (Au) dimension include customer verification, prevention of illegal access to customer accounts, verification of account ownership and prevention of misuse of customer personal data. The authentication dimension (Au) owned by Jenius has a significant effect on the security of their data and information in line with previous research which shows that authentication has a significant effect on perceived security.
The path coefficient (β) test results show that the H6 perceived ease of use (PeoU) → Perceived Usefullness (PU) relationship has a value above 0.1, namely 0.703, which means that the perceived ease of use (PeoU) variable has a significant influence on the perceived usefulness (PU) variable. The t-test results also show that the H6 relationship between perceived ease of use (PeoU) → Perceived Usefullness (PU) has a value higher than 1.96, namely 16.629 so that the hypothesis is accepted. The f2 and q2 values indicate that the effect size of H6 is large. The perceived ease of use (PeoU) variable related to customer confidence in the use of Bank Jenius can increase their productivity has a significant effect on customer confidence in the use of Bank Jenius can improve their job performance. The perceived ease of use (PeoU) dimension attributes include ease of use, access and learning how to use the Bank Jenius application. The dimension of perceived ease of use (PeoU) owned by Jenius has a significant effect on the security of their data and information in line with previous research which shows that perceived ease of use (PeoU) has a significant effect on perceived usefulness (PU).
The path coefficient (β) test results show that the H7 perceived usefulness (PU) → perceived trust (PT) relationship has a value above 0.1, namely 0.405, which means that the perceived usefulness (PU) variable has a significant influence on the perceived trust (PT) variable. The R2 and Q2 test results on perceived usefullness (PU) show that the value obtained is consecutively included in the strong category with a value of 0.494 and has a predictive correlation with a value above 0, namely 0.299. The t-test results also show that the H7 relationship between perceived usefullness (PU) → perceived trust (PT) has a value higher than 1.96, namely 4.462 so that the hypothesis is accepted while the f2 and q2 values show that the effect size of H6 is medium and small, respectively. The perceived usefulness (PU) variable relates to customer confidence that using Bank Jenius can improve their job performance and has a significant effect on customer confidence in the reliability and integrity of Bank Jenius.

The attributes of the perceived usefulness (PU) dimension include the effect of productivity, usefulness and effectiveness of using Bank Jenius on their daily lives. The dimension of perceived usefulness (PU) owned by Jenius has a significant effect on the security of their data and information in line with previous research which shows that perceived usefulness has a significant effect on perceived trust.

The path coefficient (β) test results show that the H8 perceived security (PS) → perceived trust (PT) relationship has a value above 0.1, namely 0.336, which means that the perceived security (PS) variable has a significant effect on the perceived trust (PT) variable. The R2 and Q2 test results on perceived security (PS) show that the value obtained is consecutively included in the strong category with a value of 0.626 and has a predictive correlation with a value above 0, namely 0.389. The t-test results also show that the H8 relationship between perceived security (PS) → perceived trust (PT) has a value higher than 1.96, namely 2.616 so that the hypothesis is accepted while the f2 and q2 values show that the effect size of H8 is small. The perceived security (PS) variable relates to customer trust in the security of customer data and information while being stored and managed by Bank Jenius and has a significant effect on customer trust in the reliability and integrity of Bank Jenius. The perceived security (PS) dimension attributes include the management and security of information and transaction security from Bank Jenius. The perceived security (PS) dimension owned by Jenius has a significant effect on the security of their data and information in line with previous research which prove that perceived security (PS) has a significant relationship with perceived trust.

The path coefficient (β) test results show that the H9 perceived ease of use (PeoU) → perceived trust (PT) relationship has a value above 0.1, namely 0.126, which means that the perceived ease of use (PeoU) variable has a significant influence on the perceived trust (PT) variable. The t-test results also show that the H9 relationship between perceived ease of use (PeoU) → perceived trust (PT) has a value higher than 1.96, namely 15.269 so that the hypothesis is accepted while the f2 and q2 values indicate that the effect size of H9 is small. The perceived ease of use (PeoU) variable related to customer trust in the use of Bank Jenius can increase their productivity has a significant effect on customer trust in the reliability and integrity of Bank Jenius. The perceived ease of use (PeoU) dimension attributes include ease of use, access and learning how to use the Bank Jenius application. The dimensions of perceived ease of use (PeoU) owned by the bank have a significant effect on the security of their data and information in line with previous research which prove that perceived ease of use (PeoU) has a significant relationship with perceived trust (PT).

The path coefficient (β) test results show that the H10 perceived trust (PT) → behavioral intentions (BI) relationship has a value above 0.1, namely 0.640, which means that the perceived trust (PT) variable has a significant influence on the behavioral intentions (BI) variable. The R2 and Q2 test results on perceived trust (PT) show that the value obtained is consecutively included in the strong category with a value of 0.587 and has a predictive correlation with a value above 0, namely 0.373. The t-test results also show that the H10 relationship between perceived trust (PT) → behavioral intentions (BI) has a value higher than 1.96, namely 9.202 so that the hypothesis is accepted while the f2 and q2 values show that the effect size of H10 is small. The perceived trust (PT) variable relates to customer trust in the reliability and integrity of bank and has a significant effect on the intention of bank users to use Bank Jenius in the future. The perceived trust (PT) dimension attributes include the trustworthiness, feasibility and reputation of bank towards its use. The dimension of perceived trust (PT) owned by Jenius has a significant effect on the assessment of customer intention to use the system in the future in line with previous research.

4. Conclusion

The results of research on Digital Bank User Acceptance Using the Extended Technology Acceptance Model (TAM) resulted in the following conclusions, the relationship between user assessments of digital bank security and user decisions to use the digital bank has a significant effect. Perceived security has a significant effect on user trust in the bank which also has a significant effect on user interest in using the bank. Factors or variables that influence the decision to use are influenced by factors of perceived security (PS), perceived usefulness (PU), perceived trust (PT), and behavioral intention (BI). Perceived security (PS) relates to the bank's ability to ensure that their data is safe while being stored and managed by management. Perceived usefulness (PU) relates to how the bank can give confidence to its customers that using the bank can increase customer productivity. Perceived usefulness (PU) is influenced by the perceived ease of use (PEoU) factor where customers feel that using and learning how to use the bank is easy to do. Perceived trust (PT) relates to customer confidence in the reliability and integrity of the bank. Behavioral intention (BI) relates to the customer's intention to use the bank in the future.

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