JEK
Journal of Earth Kingdom
JEK 1(1): 26–37
ISSN 3024-9821

Technology Acceptance Model (TAM) methodology system analysis on mobile banking users

Fadillah Wira Hutomo [1*]

[1] School of Information System, Binus University.
[*] Correspondence: fadillah.hutomo@binus.ac.id

Received Date: April 25, 2023 Revised Date: June 18, 2023 Accepted Date: June 19, 2023

Cite This Article:
Hutomo, F. W. (2023). Technology Acceptance Model (TAM) methodology system analysis on mobile banking users. *Journal of Earth Kingdom, 1*(1), 26-37. https://doi.org/10.61511/jek.v1i1.2023.32

Abstract
This study aims to determine the effect of using Bank BTN's M-Banking (PT. Bank Tabungan Negara (Persero) Tbk) using the Modified TAM Method. The data collection used was by distributing electronic questionnaires to 436 respondents. This research method is quantitative research. The population in this study are Bank BTN M-Banking users who are domiciled in Jabodetabek, Central Java, East Java and Non Jabodetabek, Central Java and East Java, aged 17-50 years. The sample is determined using the Slovin formula. The research tests carried out were Validity Test, Reliability Test, Inner Model Test, Outer Model Test, and Path Coefficient Bootstrapping Test. Based on the results of data analysis, it can be concluded that Perceived Usefulness (XI), Perceived Ease of Use, Perceived Safety (X3), Perceived Credibility (X4), and Perceived Convenience (X5) have a significant influence on Consumer Usage of Mobile Banking (Y).
Keywords: banking system; mobile banking; perception; TAM method

1. Introduction

The increasing use of smartphones has facilitated banks to reach citizens who do not have bank accounts. The use of cell phones has made people more aware of various bank services that had never been exposed to this kind of service before. Innovations help improve the lives of individuals and communities. The extent to which they convey change depends on how much society recognizes and embraces progress (Chakraborty, 2019). In this era of globalization, the use of the internet is not only for seeking information but also for economic transactions which is called e-commerce. The development of e-commerce has had an impact on the banking industry, where there has been a major change from the traditional banking system to electronic banking. Indonesian people's interest in using electronic banking services is very high, one of which is the use of Mobile Banking. This can be seen from the inclusion of banking sites such as Bank BCA, Bank BNI, Bank Mandiri, and Bank BTN into the Alexa.com version of the top 100 Indonesian websites (Joni et al., 2022). The rapid development of the internet today has made many changes in human life. One of the impacts that can be felt is that it is easier to obtain various information globally every day. Daily activities are inseparable from the internet. This requires us to be more technologically literate (Hadi & Assegaff, 2022).

The high level of internet users in Indonesia is a good opportunity for the business industry, one of which is Islamic banking. This opportunity is exploited by Islamic banks in transforming their financial service system into digital-based services. Some of these transformations can be seen from the existence of SMS banking, internet banking, mobile banking, automatic teller machines (ATM) and electronic data capture (EDC) (Aini, 2022). Implementing technological innovations such as m-banking has become a potential reason

for the competitive advantage of businesses in any industry. The banking industry has adopted various measures to speed up their business activities and save costs and time. There is a great need for information technology (IT) in the banking sector, thereby confirming the paradox of profitability in the industry. M-banking refers to facilities for using banking services such as online transfers, checking account balances, downloading account statements, making bill payments and other financial activities via mobile phones. M-banking services reduce financial operating costs and provide consumers with greater convenience and flexibility in terms of use and accessibility (Tiwari et al., 2021). The easy use of digital services offered by Islamic banks, is able to develop bank business activities so that the fee-based income obtained by banks also increases (Tampubolon, 2015). Based on data from the Financial Services Authority, the market share for sharia banking as of September 2021 reached 6.52% with the largest percentage contributed by BUS (64.80%), UUS (32.74%) and BPRS as much as 2.46%. This percentage has shown an increase of 0.34% from 2020.

In facing competition with conventional banks, Islamic banks continue to innovate their digital services to attract new customers, especially the Muslim community through mobile banking services. Mobile banking is a financial service developed by banks where this service can be accessed 24 hours via a smartphone connected to the internet network (Joni et al., 2022). This pattern also happened in Indonesia, including Bank BTN's M-Banking. M-Banking at the State Savings Bank has many users, but there are still fewer users than M-Banking owned by other state-owned banks, besides that the level of user satisfaction is still not fulfilled and there is a lack of socialization or understanding regarding the use of Bank BTN's M-Banking. Based on the news reported by detik.com on May 6, 2022, PT Bank Negara Indonesia (Persero) Tbk, or BNI has succeeded in presenting BNI M-Banking as the best banking service provider application among other national banks. This is based on the results of the 2021 Bank Service Excellence Monitor (BSEM) survey conducted by Marketing Research Indonesia (MRI). The various features embedded in BNI M-Banking are assessed by BSEM as superior digital services, surpassing national banks providing similar services.

Based on the problems that have been obtained by the author, both through interviews at related companies and looking for sources of some news on the Internet media, researchers will conduct this research using the modified TAM method. In this study, researchers will examine the factors that influence customers/users in using Bank BTN's M-Banking services. The problem of how customers can receive and utilize mobile banking services can be explained using the TAM (Technology Acceptance Model) framework. The TAM model has been widely used to test the acceptance of technology by system users in various contexts. This theory offers a powerful and simple explanation for the acceptance of technology and the behavior of its users (Davis, 1989). There have been many studies on the TAM (Technology Acceptance Model) technology acceptance model used to test the acceptance of technology by system users, one of which is the TAM model research developed by Gardner & Amoroso (2004). In their research, Gardner & Amoroso (2004) developed TAM by adding four external variables to be used to examine customer acceptance using internet technology. These four external variables are experience, complexity, gender, and voluntariness. Research conducted by Rampen & Sihotang (2021) using the development of the TAM model from Gardner & Amoroso (2004) shows that the constructs of the TAM model are significantly related and in other parts, some have no influence so that mobile banking users can be expected to be more thorough in using mobile banking to facilitate all payment transaction activities. Based on the previous problems and research that have been described previously, the researcher wants to know the effect of the modified TAM model on the use of Bank BTN's M-Banking.

This research purposes are including: 1) To find out how Perceived Usefulness influences use of Bank BTN M-Banking technology by Bank BTN consumers/ users/ customers. 2) To find out how Perceived Ease of Use affects the use of Bank BTN M-Banking technology by Bank BTN consumers/users/customers. 3) To find out how Perceived Safety influences the use of Bank BTN M-Banking technology by Bank BTN

consumers/users/customers. 4) To find out how Perceived Credibility affects the use of Bank BTN M-Banking technology by Bank BTN consumers/users/customers. 5) To find out how Perceived Convenience affects the use of Bank BTN M-Banking technology by Bank BTN consumers/users/customers.

This research is valuable for several reasons. To be able to provide new knowledge and ideas for further research regarding the TAM Model and the Use of M-Banking. In addition, readers can compare this research with previous research so that conclusions are obtained that will provide ideas for readers to conduct research with objects in other fields. Second, provide new material for thought and a new information about this writing for the reader. This study also provides input to readers regarding the Modified TAM Method Analysis of Bank BTN's M-Banking, so that the results of this study can provides ideas to readers to conduct further research to develop the variables in this study. This research implied that it complement similar studies that have been carried out or carried out concurrently with this research so that this research with other similar research becomes a unit that can prove and strengthen the influence of the variables from this study.

Based on the state of the art above, it can be concluded that the studies that have been mentioned researched mobile banking using the TAM method, but only one or two variables were examined, for example, such as the variables Perceived Usefulness and Perceived Ease of Use. What makes the difference between previous studies and this research is that the authors conducted a study of five variables, namely Perceived Usefulness, Perceived Ease of Use, Perceived Safety, Perceived Credibility, and Perceived Convenience. The author expects to get positive results with the research that is taken.

2. Methods

In this study, the research design used is the research associative descriptive. Research design is a strategy to achieve predetermined research objectives and acts as a guide or guide for researchers throughout the research process (Nursalam, 2003: 81). Descriptive research design is a research design that is structured to provide a systematic description of scientific information originating from the subject or object of research. An associative research design is a research that aims to determine the relationship between two or more variables (Sujarweni, 2015: 49).

The purpose of this research is to find out how to influence the modified TAM MODEL (Perceived Usefulness and Perceived Ease of Use) (Perceived Safety, Perceived Credibility, and Perceived Convenience) on the use of Bank BTN's M-Banking. This study uses the Bank BTN brand that carries out several transactions and what it feels like while using Bank BTN's M-Banking.

The unit of analysis used in this study is Bank BTN's customers who are still active and use Bank BTN's M-Banking, be it employees/staff, customers (people/community), or students who carry out internships at Bank BTN either at the Central Office or Branch office. The age range is between 17 – 50 years and over. The time horizon used in this research uses cross-sectional, where this research is only conducted once and describes a certain situation. This study used quantitative methods. The quantitative method is a research method based on the philosophy of positivism, which is used to examine certain populations or samples, which are generally taken randomly, and data is collected using research instruments, then analyzed quantitatively/statistically to test the established hypotheses (Sugiyono, 2009: 14). Quantitative approach what researchers use is a survey in the form of a questionnaire distributed to Bank BTN customers.

Bank BTN is an Indonesian State-Owned Enterprise in the form of a limited liability company and is engaged in banking financial services. The embryo of Bank BTN began with the establishment of Postspaarbank in Batavia in 1897, during the Dutch government. On April 1, 1942, Postparbank was taken over by the Japanese government and changed its name to Tyokin Kyoku. After independence was proclaimed, Tyokin Kyoku was taken over by the Indonesian government, and its name was changed to the RI Postal Savings Office. After its confirmation, the RI Pos Savings Bank is the only savings institution in Indonesia. On February 9, 1950, the government changed its name to the name Bank Savings Post.

February 9, 1950, was designated as the day and date of Bank BTN. Based on Government Regulation instead of Law No. 4 of 1963 State Gazette of the Republic of Indonesia No. 62 of 1963 dated June 22, 1963, the official name of Postal Savings Bank has been changed to State Savings Bank.

In this period, the position of Bank BTN has grown from a unit to an independent holding company. Based on a study by an independent consultant, Price Water House Coopers, the Government through the Minister of SOEs in letter no. 5 – 544/MMBU/2002 decided Bank BTN as a commercial bank with a business focus on unsubsidized housing finance. Then, the Capital Market and Financial Institution Supervisory Agency (Bapepam-LK) issued an effective statement on new securitization-based investment products. The product is EBA Danareksa Sarana Multigriya Financial I - State Savings Bank Home Ownership Loan (SMF I-KPR BTN). In the same year, Bank BTN conducted an Initial Public Offering (IPO) and was listed on the Indonesia Stock Exchange. Therefore, the trust of the public and the government in Bank BTN has led us to receive an award in the 2017 Indonesian Banking Award VI 2017 as Rank 1 Best Bank Indonesia 2017. This award will strengthen the company's optimism to be able to continue its positive performance record and achieve the company's business targets in the following years. In addition, Bank BTN has a distribution of Head Offices (DKI Jakarta), Regional Offices (RO), Branch Offices, Sharia Branch Offices, Supporting Branch Offices, Cash Offices, and Bank BTN ATMs throughout Indonesia. The following is the Vision and Mission of the State Savings Bank (Bank BTN).

According to Ghozali (2008) Structural Equation Modeling (SEM) is an evolution of the equation modeling derived from multiple principles of econometrics and combined with regulatory principles from psychology and sociology, SEM has emerged as an integral part of academic managerial research. In addition, SEM is a multivariate analysis technique that combines factor analysis and regression analysis (correlation analysis). The aim is to examine the relationship between model variables and between indicators and their constructs, as well as the relationship between constructs.

Partial Least Squares Structural Equation Modeling (PLS-SEM) is a statistical method used in social sciences, particularly in marketing and management. It is a multivariate analysis technique that combines the concepts of partial least squares regression (PLS) and structural equation modeling (SEM) (Haro, J.F., Hult, G.T.M., Ringle, C.M., & Sarstedt, M. (2014)). PLS-SEM is used to model the complex relationships between latent variables and observed variables in a data set. This pattern is useful for data sets with a large number of variables, small sample sizes, or when the relationship between variables is not linear. Researchers use PLS-SEM to test hypotheses and make predictions about complex relationships between variables. PLS aims to predict the effect of variables X and Y by explaining the theoretical relationship between the two variables (Abdillah & Hartono, 2015).

Partial Least Square function when grouped by the layman, there are 2, namely the inner model and outer model. The outer model is more toward testing validity and reliability. Meanwhile, the inner model is more towards regression, namely to assess the effect of one variable on other variables. Model fit in Partial Least Square is not like SEM which has a global fit. In PLS there are only 2 criteria for assessing model suitability, namely the suitability of the outer model which is called the outer model, and the suitability of the inner part which is called the inner model.

Based on the statements above, this study will use the PLS-SEM testing method because researchers want to study the effect of the relationship between research variables according to the type of research data used, namely. associative quantitative used to analyze the relationship between independent variables that affect the dependent variable when the independent variables of the research above are Perceived Usefulness (X1), Perceived Ease of Use (X2), Perceived Safety (X3), Perceived Credibility (X4) and Perceived Convenience (X5)). Meanwhile, the dependent variable in this study is Consumer Usage of Mobile Banking (Y). Therefore, this is consistent with that used by PLS-SEM with the aim of developing theory and because the number of respondents needed in this study is smaller, namely as many as 400 respondents.

3. Results and Discussion

Based on the results of data collection through the electronic distribution of questionnaires which were distributed directly on January 20 - February 9, 2023, there were 436 respondents. The descriptions of the respondents observed included Bank BTN M-Banking users, Age, Gender, Domicile, Education, Occupation, and Expenses (Within 1 Month). After the researchers filtered, the total number of respondents who matched the description was 432 people. The following is the result of an analysis of the description of the general description of the respondents.

3.1. Mobile Banking Utilization

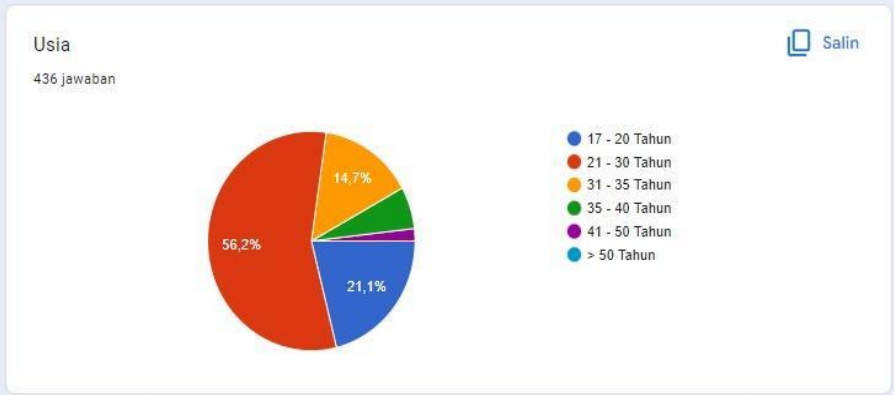

Figure 1. Respondents' age
Source: Processed data by the researcher, 2023

The results showed that the respondents in this study were 92 people aged 17-20 years, 245 respondents aged 21-30, then 64 respondents aged 31-35 years. Then, respondents aged 35-40 years totaled 27 people. As well as respondents aged 41-50 years. For this study, there were no respondents aged > 50 years. It can be concluded that the majority of Bank BTN M-Banking Users are aged 21-30 years (56.2%). In addition, for the age of 41-50 years (1.8%) are the least users of Bank BTN's M-Banking.

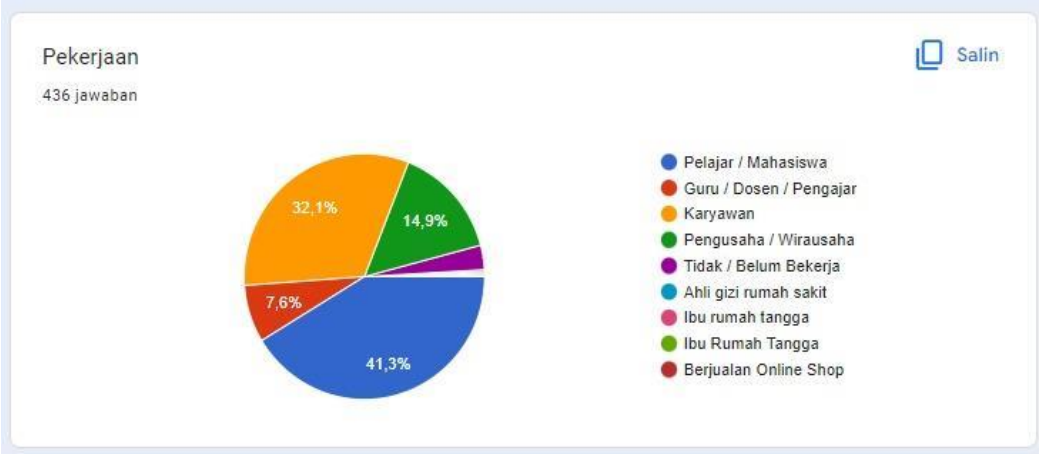

Figure 2. Respondents' occupation
Source: Processed data by the researcher, 2023

Based on Figure 4.6 and Table 4.6, there are 6 types of work for the Respondents in this study. Where is the work of the most respondents, namely from students / students with a total of 180 (41.3%) people. Then, followed by employees with a total of 140 (32.1%) people. For those who answered otherwise (apart from students/students, teachers/lecturers/teaching staff, employees, entrepreneurs/self-employed, not/not yet working) there were 4 (0.9%) respondents. Therefore, from these data it can be concluded that the majority of the Respondent's work is as a college student.

There are several expenditures of Respondents in 1 Month. Respondents spent the most, which was > IDR 2,000,000, with 145 (33.3%) respondents. In the second position followed by expenses (in 1 month), namely IDR 1,000,0000 – IDR 2,000,000 for 104 (23.9%) respondents. So, from these data, it can be concluded that the majority of Expenditure (In 1 Month) from respondents is worth > IDR 2,000,000.

Testing the structural relationship model serves to explain the variables in the study. Structural model testing is calculated through the t-test. In this study, the researcher used R Square Adjusted Consumer Usage of M-Banking (Y) 0.657 0.653 path coefficient bootstrapping test procedure with a p-value, namely the probability value and the t value. Bootstrap random sampling tends to produce a t-value of at least 1.96 and a p-value of at least 0.05 or less for the relevant relationship to be significant (Hair, Black, Babin, & Anderson, 2019). The basis used in testing the hypothesis directly is the output image and the values contained in the output patch coefficients and indirect effects.

Based on the results of survey data shared by researchers in the Google form on a Likert scale of 5 (five) points, 46 propositional indicators were obtained consisting of 6 (fruit) variables, each consisting of 5 (five) Existing Variables and 1 Fixed Variable. For the statement, there are from 1 to 9 (nine) statements. Using a Likert scale can make it easier to observe and decide on a variable (Hair, Hult, Ringle, & Sarstedt, 2021). If the validity and reliability tests are not carried out properly and carefully, monitoring of research results becomes threatened (Hardani et al., 2020). Validity and reliability tests were processed from questionnaire data distributed using SmartPLS 3.0 software.

3.2. PLS analysis

Convergent validity is a test that shows the relationship between reflective items and their latent variables. An indicator is said to be fulfilled when the loading factor value is > 0.700. The loading factor value shows the weight of each indicator/item as a measure of each variable. Indicators with large loading factors show that these indicators measure the strongest (dominant) variable. The following is a graph and table of values for convergent validity. It can be concluded that the statements contained in Variable Perceived Usefulness (X1), Perceived Ease of Use (X2), Perceived Safety (X3), Perceived Credibility (X4), Perceived Convenience (X5), and Consumer Usage of Mobile Banking (Y) declared Valid because it has passed the loading factor value> 0.700.

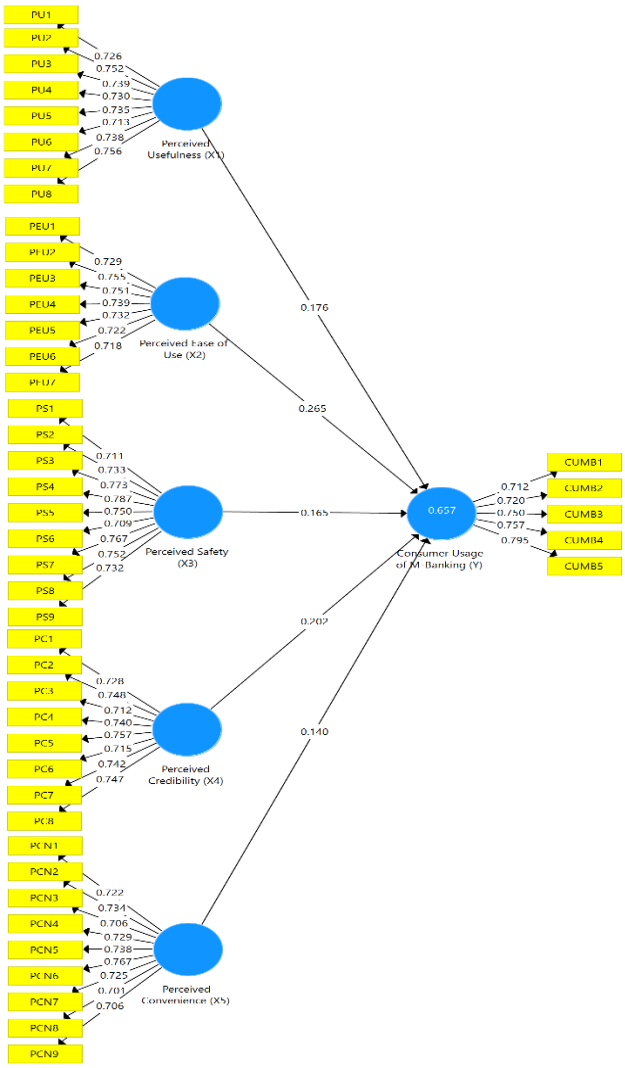

Figure 3. Convergent validity score

Discriminant validity testing in this study uses cross loading and square root of average (AVE) values with the aim of testing whether the research instrument is valid in explaining or reflecting latent variables. Discriminant validity testing can be described as discriminant validity using cross loading values with the aim of examining exceptions and research instruments in explaining or reflecting latent variables. A model has good discriminant validity if each loading value of a latent variable has the largest loading value compared to other loading values for other latent variables. The following are the results of the Cross Loading Value on latent variables. The results of the discriminant validity test in the table above present the results of the cross-loading calculation, which shows that the cross-loading value of each indicator on the variable is above the cross-loading value of the latent variable. All values are above the threshold which is 0.700. Thus, it can be concluded that the research instruments are said to be discriminantly valid.

The definition of reliability is a measure whose measurement results can still be trusted. The reliability test measures the variables used by questions or statements. Reliability testing is done by comparing Cronbach's alpha with the level or significant level used. The significance level or level used has a minimum value of 0.5, 0.6, or even 0.7 depending on the needs of the study (Gutma, 2021). In this study, the minimum value used to check reliability is 0.6. Based on the results of data processing above with SmartPLS 3.0 software, it can be seen that the values included in the variables Perceived Usefulness (X1), Perceived Ease of Use (X2), Perceived Safety (X3), Perceived Credibility (X4), Perceived Convenience (X5)) and Consumer Usage of Mobile Banking (Y) above the minimum

Cronbach's alpha value of 0.6. Thus, this study concludes that the 6 (six) research variables are reliable.

The composite reliability test serves as a reference for the consistency score for each item to measure the true value of latent variables or to build reliability (Sulistiawan, Sari & Situmorang, 2021). The minimum value of a variable declared as reliable or valid is the same as the minimum value used in Cronbach's alpha calculations. The following is a Reliability Test (Composite Reliability). the results of data processing above with SmartPLS 3.0 software can be seen in the values included in the variables Perceived Usefulness (X1), Perceived Ease of Use (X2), Perceived Safety (X3), Perceived Credibility (X4), Perceived Convenience (X5) and Consumer Usage of Mobile Banking (Y) are above the minimum Cronbach's alpha value of 0.6. Therefore, it can be concluded that the 6 (six) variables are reliable.

It is known that the value (R-square adjusted) for the Consumer Usage of M-Banking (Y) variable is 0.653 or 65.3%. This value indicates that the Consumer Usage of M-Banking (Y) variable can be explained by the variables Perceived Usefulness (X1), Perceived Ease of Use (X2), Perceived Safety (X3), Perceived Credibility (X4), and Perceived Convenience (X5) of 65.3% while the remaining 34.7% is influenced by other variables not included in the study. Testing the structural relationship model serves to explain the variables in the study. Structural model testing is done through the t-test. In this study used, the researcher used the R Square Adjusted Consumer Usage of M-Banking (Y) 0.657. Then, the 0.653 path coefficient bootstrapping test procedure with a p-value, namely the probability value and the t value. Bootstrap random sampling tends to produce a t-value of at least 1.96 and a p-value of at least 0.05 or less for the relevant relationship to be significant (Hair, Black, Babin, & Anderson, 2019). The basis used in testing the hypothesis directly is the output image and the values contained in the output patch coefficients and indirect effects.

Based on the t-test table above the effect of the variable Perceived Usefulness (X1) on Consumer Usage of M-Banking (Y)
of 0.001 <0.050 while the t-value is 3,234 > t-table (1.96), where Ho is rejected and Hypothesis 1 is accepted, which means that there is an influence of Perceived Usefulness (X1) on Consumer Usage of M-Banking (Y). These results are also in line with previous studies, that perceived usefulness has a significant influence on the use of mobile banking technology by consumers/customers (Anetoh et al., 2022; Medhi et al., 2007; Riquelne, 2010). Based on the t-test table above, the effect of the variable Perceived Ease of Use (X2) on Consumer Usage of M-Banking (Y) is 0.000 <0.050 while the calculated t value is 4,879 > t table (1.96), where Ho is rejected and Hypothesis 1 is accepted which means that there is an influence of Perceived Ease of Use (X2) on Consumer Usage of M-Banking (Y). This is also consistent with previous studies, that perceived ease of use has a significant influence on the use of mobile banking technology by consumers/customers. (Anetoh et al., 2022; Oluchi et al., 2013).

Based on the t-test table above, the effect of the variable Perceived Safety (X3) on Consumer Usage of M-Banking (Y) is 0.001 <0.050 while the calculated t value is 3,366 > t table (1.96), where Ho is rejected and Hypothesis 1 is accepted, which means that there is the effect of Perceived Safety (X3) on Consumer Usage of M-Banking (Y). This is also by previous research, that perceived safety has a significant influence on the use of mobile banking technology by consumers/customers (Anetoh et al., 2022; Adesina, 2012). Based on the t-test table above, the effect of the variable Perceived Convenience (X5) on Consumer Usage of M-Banking (Y) is 0.016 <0.050 while the t-count value is 2,413 > t-table (1.96), where Ho is rejected and Hypothesis 1 is accepted, which means that there is the effect of Perceived Convenience (X5) on Consumer Usage of M-Banking (Y). This is also following previous research, that perceived convenience has a significant influence on the use of mobile banking technology by consumers/customers. (Anetoh et al., 2022; Luarn & Lin, 2005; Riquelne, 2010). Based on the results of the Hypothesis Test above, it can be seen that all Independent Variables (Perceived Usefulness, Perceived Ease of Use, Perceived Safety, Perceived Credibility, and Perceived Convenience) have a significant influence on the Dependent Variable (Consumer Usage of Mobile Banking).

3.3. Implementation of perceived variables

Based on the research results, it is known that the variable Perceived Usefulness has a significant influence on the Consumer Usage of Mobile Banking variable. Therefore, the implementation of using Bank BTN's M-Banking is where the development of Bank BTN's M-Banking technology is of perceived usefulness, such as when you want to make a transfer transaction between fellow BTN Banks or other banks, you don't need to use the M-Token. This is because M-Token requires credit and takes a little longer so transactions from customers become hampered, inefficient, and ineffective. Therefore, in the development of Bank BTN's M-Banking Technology, M-Token should not be created so that customers can use M-Banking more easily, effectively, and efficiently.

Based on the research results, it is known that the variable Perceived Ease of Use has a significant influence on the Consumer Usage of Mobile Banking variable. Therefore, the implementation of the use of Bank BTN's M-Banking is where the development of Bank BTN's M-Banking technology from the aspect of perceived ease of use (ease of use) such as the layout of the User Interface Design of M-Banking Bank BTN must always be developed and more innovative. In addition, on the Transfer between Other Banks menu, the list of Destination Banks is not sorted alphabetically. This makes it a little difficult for customers to find a Destination Bank. Thus, the company can develop this feature by further sorting the layout of the names of the Banks to which transfer transactions are based on alphabetic order so that customers find it easier to find the Destination Bank.

Based on the research results, it is known that the variable Perceived Safety has a significant influence on the Consumer Usage of Mobile Banking variable. Therefore, the implementation of the use of Bank BTN's M-Banking is where the development of Bank BTN's M-Banking technology from the aspect of perceived safety (perceived security), namely the level of security of Bank BTN's M-Banking must be more stringent as there are two authentication processes, namely by entering the username / User ID and Password from the User / Customer to make it more secure and not easily hacked by Hackers.

Based on the research results, it is known that the Perceived Credibility variable has a significant influence on the Consumer Usage of Mobile Banking variables. Therefore, the implementation of the use of Bank BTN's M-Banking is where the development of Bank BTN's M-Banking technology from the aspect of perceived credibility, namely Bank BTN's M-Banking can ensure its customers avoid risks and secrets that are privacy, operational, and physical aspects are maintained and credible. Based on the research results, it is known that the variable Perceived Convenience has a significant influence on the Consumer Usage of Mobile Banking variable. Therefore, the implementation of the use of Bank BTN's M-Banking is where the development of Bank BTN's M-Banking technology from the aspect of perceived convenience, namely the appearance of the Bank BTN's M-Banking application is simpler, but innovative and creative. This is so that customers/users feel more comfortable in operating M-Banking Bank BTN.

4. Conclusions

Based on the results of research conducted on data collected through surveys and processed with SmartPLS 3.0 software using quantitative methods and PLS-SEM from researchers, it can be concluded that: the Path Coefficient Bootstrapping Test to test the hypotheses, the five hypotheses show a significant effect with a p-value <0.05, namely

1) The variable Perceived Usefulness has a significant influence on the Consumer Usage of Mobile Banking with a P-Values of 0.001 which is <0.050 while the t-count value is 3,234 which is > t table (1.96) so that if Perceived Usefulness increases, the Consumer Usage of Mobile Banking also increases.

2) The variable Perceived Ease of Use has a significant influence on the Consumer Usage of Mobile Banking with a P-Values of 0.000 which is <0.050 while the calculated t value is 4,879 which is > t table (1.96) so that if the Perceived Ease of Use increases, the Consumer Usage of Mobile Banking is also increasing.

3) The variable Perceived Safety has a significant influence on Consumer Usage of Mobile Banking with a P-Values of 0.001 which is <0.050 while the calculated t value is 3,366 which

is > t table (1.96) so that Perceived Safety increases, the Consumer Usage of Mobile Banking also increases.
4) The variable Perceived Credibility has a significant influence on the Consumer Usage of Mobile Banking with a P-Values of 0.000 which is <0.050 while the calculated t value is 4,683 which is > t table (1.96) so that the Perceived Credibility then the Consumer Usage of Mobile Banking also increases.
5) The variable Perceived Convenience has a significant influence on the Consumer Usage of Mobile Banking with a P-Values of 0.016 which is <0.050 while the calculated t value is 2,413 which is > t table (1.96) so that Perceived Convenience increases, the Consumer Usage of Mobile Banking also increases.

Bank BTN M-Banking users can get information through this research, by using the TAM model which has been modified to make it more effective, efficient, and easily accepted. The results of the analysis show that the variables Perceived Usefulness, Perceived Ease of Use, Perceived Safety, Perceived Credibility, and Perceived Convenience have a significant influence on the Consumer Usage of Mobile Banking variable. In addition, the results of the Path Coefficient Bootstrapping Test showed that the highest t-Statistics value was owned by the Variable Perceived Ease of Use with a value of 4,879. These results indicate that the variable Perceived Ease of Use (Ease of Use) becomes the independent variable that has the greatest significant influence on the Dependent variable (Consumer Usage of Mobile Banking), therefore, this variable focuses on the development of Bank BTN's M-Banking.

This research is useful to add insight and develop other variables that may influence Consumer Usage of Mobile Banking. This can also be applied to the use of M-Banking Bank BTN. For example, PT. State Savings Bank (Persero) Tbk which is responsible for making Bank BTN M-Banking can use the findings of this study, to find out what things can influence the use of Bank BTN M-Banking by its customers/consumers. It can also find out the factors that influence the quality of Bank BTN's M-Banking services both in terms of perceived benefits, ease of use, security and privacy, credibility, and convenience possessed by Bank BTN's M-Banking. Thus, Bank BTN M-Banking users will continue to increase and be interested in using M-Banking as a place to make transactions, check balances, Top Up E-Wallet, etc.

Based on the conclusions drawn from the research results above, the suggestions given by researchers can be used for further research that conducts similar research, namely. The results of this study are used as a reference and additional information about information security issues. and privacy. The researcher acknowledges that this research is ongoing and there are several limitations that can be used as suggestions for further research, including:
1. Adding other variables that are suspected of affecting privacy and information security issues.
2. Expanding the scope of research by continuing to increase the number of residences and the number of respondents of various ages.
3. Adding more detailed references and data sources from other studies that have been done before.
4. Using different research methods, data collection techniques and research plans.

Funding
This research received no external funding.

Ethical Review Board Statement
Not applicable.

Informed Consent Statement
Not applicable.

Data Availability Statement
Data will be provided by the author by request.

Conflicts of Interest

The authors declare no conflict of interest.

References

Adams, P. C. (1992). Television as gathering place. Annals of the Association of American Geographers, 82(1), 117–135.

Ahonen, T. T., & Barrett, J. (2002). Services for UMTS: Creating killer applications in 3G. John Wiley & Sons.

Akturan, U., & Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. Marketing Intelligence & Planning, 30(4), 444–459.

Al-Somali, S. A., Gholami, R., & Clegg, B. (2008). Internet banking acceptance in the context of developing countries: an extension of the technology acceptance model. European Conference on Management of Technology, 12(9), 1–16.

Al Fatta, H. (2009). Rekayasa Sistem Pengenalan Wajah. Penerbit Andi.

Atintas, M. H., & Gursakal, N. (2007). Phishing attacks and perceptions of service quality: a content analysis of internet banking in Turkey. The Journal of Internet Banking and Commerce, 12(2), 1–13.

Adesina, A.A., Ayo, C.K. & Uyinomen, O.E. (2010). An empirical investigation of level of users' acceptance of e-banking in Nigeria: based on technology acceptance model. Journal of Internet Banking and Commerce, 15(1),1-13.

Adesinasi, A. (2012). Mobile banking adoption and consumer behaviour. Thesis submitted to London school of Business and Finance for the award of Master of Science in Marketing Global.

Agwu, M.E. & Carter, A.L. (2014). Mobile phone banking in Nigeria: benefits, problems and prospects. International Journal of Commerce, 3(6), 50-70. available at http://www.ijbcact.com

Chakraborty, D. (2019). Adoption of M-banking service apps for rural consumers: An empirical analysis. NMIMS Management Review, XXXVII(3), 971–1023. https://management-review.nmims.edu/wp-content/uploads/2019/08/MR-34-52.pdf

Chiemeke, S. C., Evwiekpaefe, A. E., & Chete, F. O. (2006). The adoption of Internet banking in Nigeria: An empirical investigation. Journal of Internet Banking and Commerce, 11(3), 1–10.

Daniel, E. (1999). Provision of electronic banking in the UK and the Republic of Ireland. International Journal of Bank Marketing, 17(2), 72–83.

Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–339. https://doi.org/doi:10.2307/249008

Davis, G. B. (1991). Kerangka dasar sistem informasi manajemen.

Ezeoha, A. E. (2005). Increasing incidence of poverty in Nigeria: An impact assessment of the government's economic reform programme. Journal of Social Development in Africa, 20(2), 112–131.

Farah, M. F., Hasni, M. J. S., & Abbas, A. K. (2018). Mobile-banking adoption: empirical evidence from the banking sector in Pakistan. International Journal of Bank Marketing.

Gardner, C., & Amoroso, D. L. (2004). Development of an instrument to measure the acceptance of internet technology by consumers. 37th Annual Hawaii International Conference on System Sciences, 2004. Proceedings of The, 10-pp.

Guriting, P., & Oly Ndubisi, N. (2006). Borneo online banking: evaluating customer perceptions and behavioural intention. Management Research News, 29(1/2), 6– 15.

Herzberg, A. (2003). Payments and banking with mobile personal devices. Communications of the ACM, 46(5), 53–58.

Kemper, H.-G., & Wolf, E. (2002). Iterative process models for mobile application systems: A framework. ICIS 2002 Proceedings, 37.

Koksal, M. H. (2016). The intentions of Lebanese consumers to adopt mobile banking. International Journal of Bank Marketing.

Laforet, S., & Li, X. (2005). Consumers' attitudes towards online and mobile banking in China. International Journal of Bank Marketing.

Langendoerfer, P. (2002). M-commerce: Why it does not fly (yet?). Proceedings of the SSGRR 2002s Conference.

Lee, C.-P., Mattila, M., & Shim, J. P. (2007). An exploratory study of information systems resistance: the case of mobile banking systems in Korea and Finland. AMCIS 2007 Proceedings, 448.

Lee, K. C., & Chung, N. (2009). Understanding factors affecting trust in and satisfaction with mobile banking in Korea: A modified DeLone and McLean's model perspective. Interacting with Computers, 21(5–6), 385–392.

Luarn, P., & Lin, H.-H. (2005). Toward an understanding of the behavioral intention to use mobile banking. Computers in Human Behavior, 21(6), 873–891.

Mattila, A., & Mattila, M. (2005). How perceived security appears in the commercialisation of internet banking. International Journal of Financial Services Management, 1(1), 89–101.

Mohammad, M. T. S. H. (2011). Towards an Islamic social (waqf) bank. International Journal of Trade, Economics and Finance, 2(5), 381.

Ngai, E. W. T., & Gunasekaran, A. (2007). A review for mobile commerce research and applications. Decision Support Systems, 43(1), 3–15.

Ngai, E. W. T., & Wat, F. K. T. (2002). A literature review and classification of electronic commerce research. Information & Management, 39(5), 415–429.

Onodugo, I. C. (2015). Overview of electronic banking in Nigeria. International Journal of Multidisciplinary Research and Development, 2(7), 336–342.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. Internet Research, 14(3), 224–235.

Polatoglu, V. N., & Ekin, S. (2001). An empirical investigation of the Turkish consumers' acceptance of Internet banking services. International Journal of Bank Marketing.

Porteous, D. (2006). The enabling environment for mobile banking in Africa. DfID London.

Porteous, D. (2007). Just how transformational is m-banking. Commissioned by Finmark.

Robinson, J. P., Kestnbaum, M., Neustadtl, A., & Alvarez, A. (2000). Mass media use and social life among Internet users. Social Science Computer Review, 18(4), 490–501.

Salehi, M., & Alipour, M. (2010). E-banking in emerging economy: empirical evidence of Iran. International Journal of Economics and Finance, 2(1), 201– 209.

Selim, H. M. (2003). An empirical investigation of student acceptance of course websites. Computers & Education, 40(4), 343–360.

Shaikh, A. A., & Karjaluoto, H. (2015). Mobile banking adoption: A literature review. Telematics and Informatics, 32(1), 129–142.

Singh, A. B. (2012). Mobile banking based money order for India Post: Feasible model and assessing demand potential. Procedia-Social and Behavioral Sciences, 37, 466–481.

Tam, C., & Oliveira, T. (2017). Literature review of mobile banking and individual performance. International Journal of Bank Marketing, 35(7), 1044–1067.

Tiwari, P., Tiwari, S. K., & Gupta, A. (2021). Examining the Impact of Customers' Awareness, Risk and Trust in M-Banking Adoption. FIIB Business Review, 10(4), 413–423. https://doi.org/10.1177/23197145211019924

Turban, E., King, D., Lee, J., & Viehland, D. (2004). Electronic Commerce: a managerial perspective 2004. Pearson Education.

Wang, Y., Wang, Y., Lin, H., & Tang, T. (2003). Determinants of user acceptance of Internet banking: an empirical study. International Journal of Service Industry Management, 14(5), 501–519.

Zeithaml, V. A., Parasuraman, A., & Malhotra, A. (2002). Service quality delivery through web sites: a critical review of extant knowledge. Journal of the Academy of Marketing Science, 30(4), 362–375.

Zhou, T. (2012). Understanding users' initial trust in mobile banking: An elaboration likelihood perspective. Computers in Human Behavior, 28(4), 1518–1525.