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Effect of Attitude on Mobile Banking Acceptance Using Extended UTAUT Model

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A B S T R A C T

This research aims to evaluate the effect of attitude on mobile banking acceptance using the extended UTAUT Model. Specifically, surveying the Medan city area covered 392 mobile banking users from several banks. By using Structural Equation Modeling (SEM) and SmartPLS software. This research's man contribution is introducing attitude variables in the combination of UTAUT models, task technology fit, and trust, which have a significant effect on behavior intention. Based on this study results, it shows that social influence and attitude are a significant effect on behavior intention,facilitating condition, and behavior intention is a significant effect use behavior of mobile banking users from several banks. While performance expectancy, effort expectancy, task technology fit, and trust didn't significantly effect on the behavior intention of mobile banking users from several banks. This Research implies two important policymakers' findings. First, Banking Management needs to ensure that it always makes necessary improvements in simplifying technology to understand it easily. Second, need to ensure that we regularly evaluate the performance of mobile banking users from several banks to mae benefits of using M-Banking technology to support financial transactions needs.

1. Introduction

M-Banking is defined as the financial industry's product or service, expecially Banking using a smartphone (Baabdullah, Ali Abdallah Alalwan, *et al.*, 2019). The M-Banking system's importance is to make transactions such as transferring money, paying bills, top-up E-Money, and checking mutation in digital banking (Baabdullah, Ali A. Alalwan, *et al.*, 2019). Entering the Digital Banking Era, several banks in the city of Medan continues to endeavor to develop the M-Banking application.

There are many complaints from customers using the M-Banking application, as stated in a review on the Playstore. Some M-Banking frequently experiences interruption on a specific date at the end of the month at the payroll for bank employees. Customers who place online deposits on that day cannot be seen at the M-Banking application. In the use of M-Banking technology, not only the performance of M-Banking which handles customers too slowly, SMS tokens are sometimes not sent, bill payments with failed status but customer balances are still deducted by customers who feel uncomfortable using M-Banking. There are still many customers those aged 45 years and over who do not want to open themselves up to take advantage of the M-Banking application. So, the number of customers who had bad experiences in transactions using the M-Banking application. (source: based on a review of the M-Banking application on the Playstore).

The importance of these problems is carried out to feel the benefits of using the M-Banking application and raises a good experience. Therefore, researchers combine the UTAUT (Unified Theory of Acceptance and Usage of Technology) model to understand the extent to which most customers perceive the acceptance and utilization of technology. The TTF (Task Technology Fit) adoption model shows that users will evaluate and meaure the level of success of a technology in carrying out daily tasks or activities efficiently. Trust indicates that the attitude leads to how important a person's trust is (Baabdullah, Ali A. Alalwan, *et al.*, 2019). If consumers consistently find positive reviews about M-Banking, they will develop confidence in the innovative banking channel and intend to adopt it (Shankar, Jebarajakirthy and Ashaduzzaman, 2020).

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Attitude is a way of changing a place with favorable or unfavorable behavior like most of the buyers. Where attitude is held to reflect the person's prominent behavioral beliefs concerning the possible personal consequences of the action. The respondents' attitude also determines whether they were open to learning about how to use the technology (Baabdullah, Ali A. Alalwan, *et al.*, 2019). Attitude is a mediator of performance expectancy, effort expectancy, social influence, and facilitating conditions of behavioral intention and also directly affects user behavior. Therefore, one must concentrate on improving the ease of use and usability of the system so that the acceptance and use of innovation can be managed more successfully (Lishomwa and Phiri, 2020). The main contribution is introducing attitude variables in the combination of UTAUT models, task technology fit, and trust, which have a significant effect on behavior intention.

2. Research Methodology

2.1. Research Model

In this study, it will be seen to what extent the level of acceptance of a technology involving seven independent variables (Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Task Technology Fit, Trust) and two dependent variables (Behavior Intention and Use behavior) and four moderations (Gender, Age, Experience, Voluntariness of Use). Based on the descriptions above, the framework of this research can be described, as follows :

H_1: Performance Expectancy positively influences Behavior Intention
H_2 : Effort Expectancy positively influences Behavior Intention
H_3 : Social Influence positively influences Behavior Intention
H_4 : Facilitating Conditions positively influences Use Behavior
H_5 : Task Technology Fit positively influences Behavior Intention
H_6 : Trust positively influences Behavior Intention
H_7 : Attitude positively influences Behavior Intention
H_8 : Behavior Intention positively influences Use Behavior
H_9 : Gender moderates the effect of Performance Expectancy on Behavior Intention
H_{10} : Gender moderates the effect of Effort Expectancy on Behavior Intention
H_{11} : Gender moderates the effect of Social Influence on Behavior Intention
H_{12} : Age moderates the effect of Performance Expectancy on Behavior Intention
H_{13} : Age moderates the effect of Effort Expectancy on Behavior Intention
H_{14} : Age moderates the effect of Social Influence on Behavior Intention
H_{15} : Experience moderates the effect of Effort Expectancy on Behavior Intention
H_{16} : Experience moderates the effect of Social Influence on Behavior Intention
H_{17} : Experience moderates the effect of Facilitating Conditions on Behavior Intention
H_{18} : Voluntariness of Use moderates the effect of Facilitating Conditions on Behavior Intention

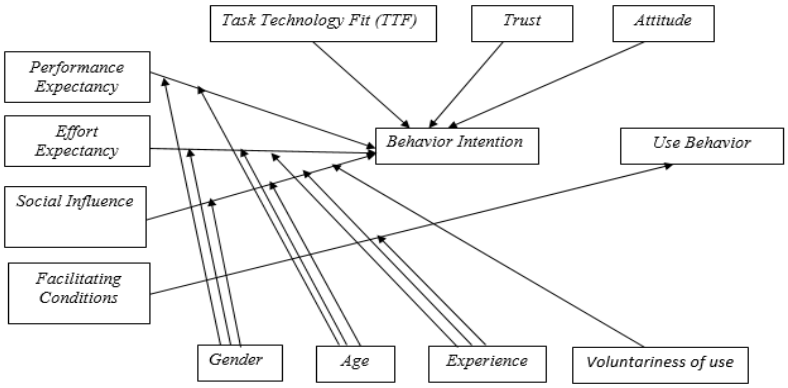

Fig 1. Problem Solving Concept Framework

2.2. Data Collection Method

This research was conducted as a quantitative study using a survey approach and analysis methods

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including questionnaires with close questions (Dwivedi *et al.*, 2019). The questionnaire is the most widely used data method in survey research to distribute online questionnaires according to a predetermined sample and population (Islam, 2020).

Population is mobile banking users from several banks in Medan City, who are the object of research. The number of samples in this study was 385 respondents, and as many as 392 respondents' data collected that could be processed or met the requirements in the data processing. The sampling method used by convenience sampling is a non-probability sampling method of collecting samples where the subject was chosen because of its convenient accessibility (Sciarelli, Gheith and Tani, 2020). Researchers have the freedom to choose the fastest sample to fill out questionnaires and send questionnaires (Alalwan, Dwivedi and Rana, 2017).

2.3. Techniques Data Analysis

The statistical method used to test the hypothesis proposed in this study is multiple regression with the help of the SmartPLS 3.3.2 program. This method is used to test the power that influences performance expectancy, effort expectancy, social influence, facilitating conditions, task technology fit, trust, attitude, moderation (gender, age, experience, the Voluntariness of use) on interest in behavior intention and use behavior the system M-Banking. The regression equation model in this study is as follows : (Michaelides and Spanos, 2020)

$$Y_1 = \propto + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \quad \text{.....(1)}$$

$$\begin{aligned} Behavior\ Intention_1 = {} & \propto + \beta_1 Performance\ Expectancy + \beta_2\ Effort\ Expectancy + \\ & \beta_3 Social\ Influence + \beta_4 Facilitating\ Conditions + \beta_5 Task\ Technology\ Fit + \beta_6 Trust + \\ & \beta_7 Attitude + \beta_8 Performance\ Expectancy * Gender + \beta_9 Effort\ Expectancy * Gender + \\ & \beta_{10} Social\ Influence * Gender + \beta_{11} Performance\ Expectancy * Age + \beta_{12} Effort\ Expectancy * \\ & Age + \beta_{13} FSocial\ Influence * Age + \beta_{14} Effort\ Expectancy * Experience + \\ & \beta_{15} Social\ Influence * PExperience + \beta_{16} Social\ Influence * Voluntariness\ of\ Use + \varepsilon \end{aligned} \quad \text{.....(2)}$$

$$Use\ Behavior_2 = \propto + \beta_1 Behavior\ Intention + \beta_2 Facilitating\ Conditions + \beta_3 Facilitating\ Conditions * Experience + \varepsilon \quad \text{.....(3)}$$

Where: $\propto$ is constant, β is Regression Coefficient and ε is Error

3. Results

At this stage, the evaluation of the measurement model (Outer Model) was carried out using a convergent validity test, discriminant validity test, and reliability test. The convergent validity test is tested by evaluating the loading factor value and only accepting indicators with a loading factor greater than 0,7, so it can be ignored that the measurement measures convergent validity (Hair *et al.*, 2017; Michaelides and Spanos, 2020). Furthermore, the discriminant validity test was carried out on level indicators and latent variables. Measurements are made on each indicator that measures the construct and must have a higher appearance than other constructs (Izzati, 2020). The type of measurement that uses cross-loading is the type most commonly used in discriminant validity. Meanwhile, at the level variable, the discriminant validity uses AVE (Average Variance Extracted). The variable must have an AVE value > 0,5 to be declared valid (Michaelides and Spanos, 2020). Based on The results of the measurement model using the SmartPLS software, it is presented in Fig 2 below.

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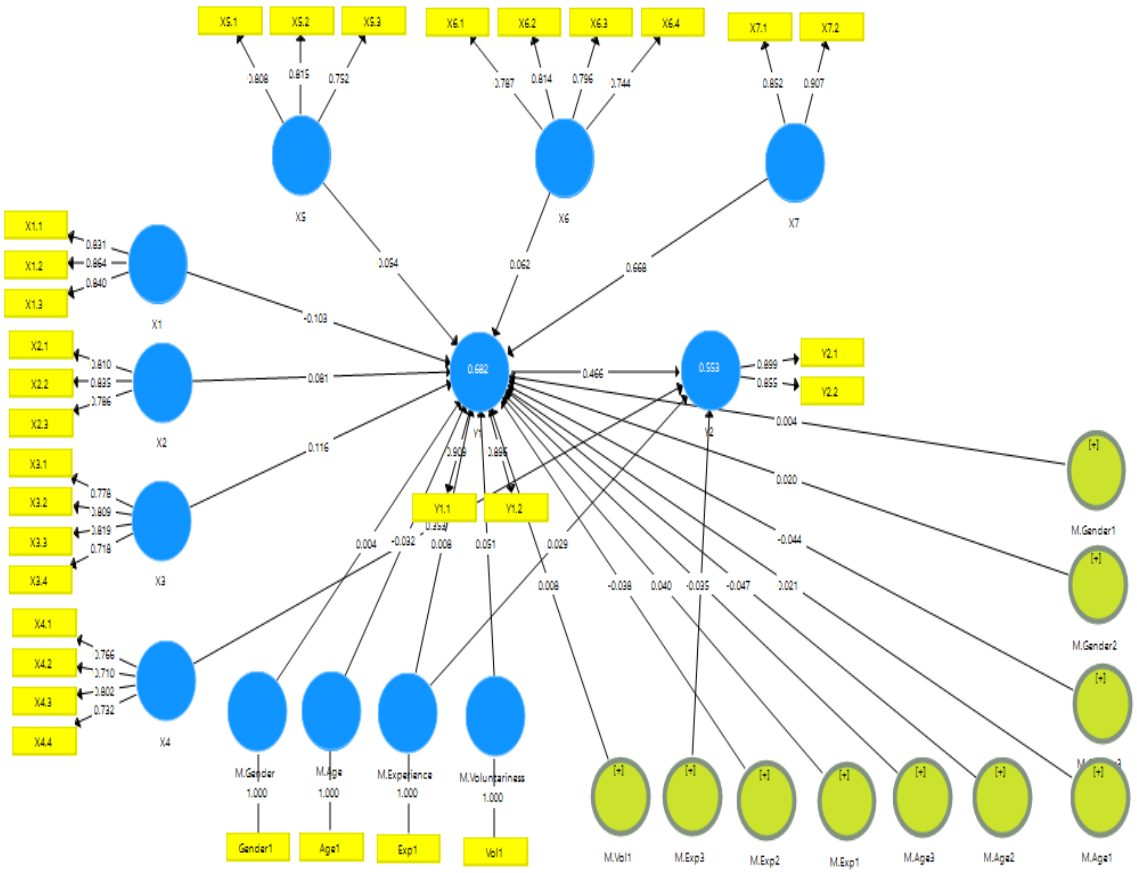

Fig 2 Measurement Model

Where in Fig 2 is the result of the loading factor value on each indicator, which will be explained in Table 1 :

Tabel 1.
Loading Factor

Variable	Indicator	Loading Factor Value
Performance Expectancy	X1.1	0,831
	X1.2	0,864
	X1.3	0,840
Effort Expectancy	X2.1	0,810
	X2.2	0,835
	X2.3	0,786
Social Influence	X3.1	0,778
	X3.2	0,809
	X3.3	0,819
	X3.4	0,718
Facilitating Conditions	X4.1	0,766
	X4.2	0,710
	X4.3	0,802
	X4.4	0,732
Task Technology Fit	X5.1	0,808
	X5.2	0,815
	X5.3	0,752
Trust	X6.1	0,787
	X6.2	0,814
	X6.3	0,796

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Variable	Indicator	Loading Factor Value
Attitude	X6.4	0,744
	X7.1	0,852
	X7.2	0,907
Behavior Intention	Y1.1	0,909
	Y1.2	0,896
Use Behavior	Y2.1	0,899
	Y2.2	0,855
Gender	Gender1	1,000
Age	Age1	1,000
Experience	Exp1	1,000
Voluntariness of Use	Vol1	1,000

The loading factor results show that all indicators have a loading factor value greater than 0,70. It can be concluded that all indicators have met the convergent validity requirements.

Following are the results of the AVE (Average Variance Extracted) for each indicator :

Table 2.
Average Variance Extracted (AVE)

Variable	AVE	Decision
Performance Expectancy (X1)	0,714	Valid
Effort Expectancy (X2)	0,657	Valid
Social Influence (X3)	0,611	Valid
Conditions Facilitating (X4)	0,568	Valid
Task Technology Fit (X5)	0,627	Valid
Trust (X6)	0,617	Valid
Attitude (X7)	0,774	Valid
Behavior Intention (Y1)	0,814	Valid
Use Behavior (Y2)	0,770	Valid
M.Gender	1,000	Valid
M.Gender 1	1,000	Valid
M.Gender 2	1,000	Valid
M.Gender 3	1,000	Valid
M.Age	1,000	Valid
M.Age 1	1,000	Valid
M.Age 2	1,000	Valid
M.Age 3	1,000	Valid
M.Experience	1,000	Valid
M.Exp 1	1,000	Valid
M.Exp 2	1,000	Valid
M.Exp 3	1,000	Valid
M.Voluntariness	1,000	Valid
M.Vol 1	1,000	Valid

The discriminant validity test results showed that the AVE (Average Variance Extracted) value for each variable used in this study was 0,5. So, it can be concluded that all variables are declared valid. Testing the reliability of a construct with reflexive indicators can be done in two ways: Cronbach's Alpha and Composite Reliability. Where it can be seen from the Cronbach's Alpha value must be > 0,7, and the Composite Reliability value must be > 0,7 can be said to be reliable (Michaelides and Spanos, 2020). Following are the results of Cronbach's Alpha and Composite Reliability on each indicator :

Table 3
Cronbach's Alpha and Composite Reliability

Variable	Cronbach's Alpha	Composite Reliability	Decision
Performance Expectancy (X1)	0,800	0,882	Reliable
Effort Expectancy (X2)	0,739	0,852	Reliable

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Variable	Cronbach's Alpha	Composite Reliability	Decision
Social Influence (X3)	0,787	0,863	Reliable
Conditions Facilitating (X4)	0,746	0,840	Reliable
Task Technology Fit (X5)	0,702	0,835	Reliable
Trust (X6)	0,793	0,866	Reliable
Attitude (X7)	0,712	0,873	Reliable
Behavior Intention (Y1)	0,772	0,898	Reliable
Use Behavior (Y2)	0,702	0,870	Reliable
M.Gender	1,000	1,000	Reliable
M.Gender 1	1,000	1,000	Reliable
M.Gender 2	1,000	1,000	Reliable
M.Gender 3	1,000	1,000	Reliable
M.Age	1,000	1,000	Reliable
M.Age 1	1,000	1,000	Reliable
M.Age 2	1,000	1,000	Reliable
M.Age 3	1,000	1,000	Reliable
M.Experience	1,000	1,000	Reliable
M.Exp 1	1,000	1,000	Reliable
M.Exp 2	1,000	1,000	Reliable
M.Exp 3	1,000	1,000	Reliable
M.Voluntariness	1,000	1,000	Reliable
M.Vol 1	1,000	1,000	Reliable

The composite reliability test results show that the value of Cronbach's Alpha and Composite Reliability on each of the variables used in this study is > 0,7. So, it can be concluded that all variables are declared reliable.

Furthermore, the structural model is evaluated using the R-Square (R^2) for the dependent variable using the Stone-Geisser Q-Square test and an analysis of the path coefficient's significant value. The variable is declared to have a significant effect if the T-Statistics Value > 1,96 and the P-Value < 0,05 (Michaelides and Spanos, 2020). The following in Fig 3 is the result of the T-Statistics value:

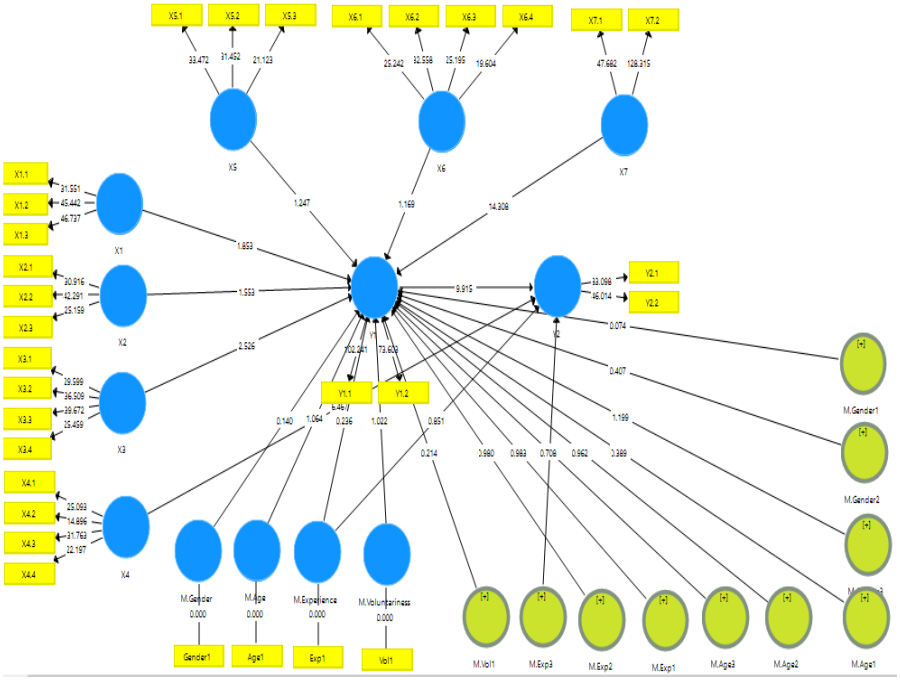

Fig 3. Structural Model

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Where in Fig 3 is the result of the T-Statistics Value for each relation between variables which will be explained in Table 4 :

Table 4.
Path Coefficient

Relationship	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T-Statictics (|O/STDEV|)	P-Values	Decision
X1 -> Y1	-0,103	-0,101	0,056	1,853	0,064	Not Supported
X2 -> Y1	0,081	0,078	0,052	1,553	0,121	Not Supported
X3 -> Y1	0,116	0,120	0,046	2,526	0,012	Supported
X4 -> Y2	0,353	0,349	0,055	6,467	0,000	Supported
X5 -> Y1	0,054	0,052	0,044	1,247	0,213	Not Supported
X6 -> Y1	0,062	0,067	0,053	1,169	0,243	Not Supported
X7 -> Y1	0,668	0,663	0,047	14,308	0,000	Supported
Y1 -> Y2	0,466	0,466	0,047	9,915	0,000	Supported
M.Gender -> Y1	0,004	0,006	0,031	0140	0,889	Not Supported
M.Gender1 -> Y1	0,004	0,009	0,048	0,074	0,941	Not Supported
M.Gender2-> Y1	0,020	0,018	0,050	0,407	0,684	Not Supported
M.Gender3 -> Y1	-0,044	-0,044	0,036	1,199	0,231	Not Supported
M.Age -> Y1	-0,032	-0,032	0,030	1,064	0,288	Not Supported
M.Age1 ->Y1	0,021	0,027	0,054	0,389	0,697	Not Supported
M.Age2 -> Y1	-0,047	-0,049	0,049	0,962	0,336	Not Supported
M.Age3 -> Y1	0,014	0,016	0,035	0,384	0,701	Not Supported
M.Experience -> Y1	0,008	0,006	0,034	0,236	0,814	Not Supported
M.Exp1 -> Y1	0,040	0,039	0,041	0,983	0,326	Not Supported
M.Exp2 -> Y1	-0,038	-0,041	0,039	0,980	0,328	Not Supported
M.Experience -> Y2	0,029	0,030	0,036	0,824	0,410	Not Supported
M.Exp3 -> Y2	-0,035	-0,038	0,049	0,708	0,479	Not Supported
M.Voluntariness -> Y1	0,051	0,048	0,050	1,022	0,307	Not Supported
M.Vol1 -> Y1	0,008	0,007	0,038	0,214	0,831	Not Supported

Based on the Path Coefficient Table,

Performance expectancy (X1), effort expectancy (X2), task technology fit (X5), trust (X6) does not affect the behavior intention (Y1) M-Banking application.

Social influence (X3), attitude (X7) have a significant effect on the behavior intention (Y1) for M-Banking application.

Facilitating Conditions (X4), behavior intention (Y1) has a significant effect on using Behavior (Y2) M-Banking application.

Gender (M.Gender1), age (M.Age1), does not affect moderation effect performance expectancy (X1) on the behavior intention (Y1) M-Banking application.

Gender (M.Gender2), age (M.Age2), experience (M.Exp1) do not moderate the effect of effort expectancy (X2) on behavior intention (Y1) M-Banking application.

Gender (M.Gender3), age (M.Age3), experience (M.Exp2), Voluntariness of use (M.Vol1) does not moderation effect social influence (X3) on behavior intention (Y1) M-Banking application.

Experience (M.Exp3) does not moderation effect facilitating conditions (X4) for use behavior (Y2) M-Banking application.

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The results of R-Square (R^2) can show that behavior intention (Y1) has the Value of R-Square (R^2) 68,2%, where behavior intention (Y1) has a significant effect by social influence (X3) and attitude (X7), while 31,8% was caused by other variables not included in the research model. Use behavior (Y2) has a significant effect on facilitating condition (X4) and behavior intention (Y1), while 44,7% was caused by other variables not included in the research model.

4. Conclusion

This study used a combination of the UTAUT model, task technology fit, attitude, and trust as a model to examine the relationship between use of M-Banking, moderation (gender, age, experience, and Voluntariness of use), main independent (performance expectancy, effort expectancy, social influence, facilitating conditions, task technology fit, and attitude) and the dependent variable (behavior intention and use behavior). The findings of this study contribute to the attitude variable, which it is important to add in the combination of the UTAUT, TTF, and Trust models. Where the attitude variable has a significant effect on behavior intention. This research believes that attitudes reflect people's beliefs to use technology by determining whether people are open to learning about services if they know how to use technology. If the convenience of high technology, the positive attitude of system users will also increase.

There are suggestions related to the research that has been done.

a. First, Banking Management needs to ensure that it always makes necessary improvements in simplifying technology to understand it easily.
b. Second, need to ensure that we regularly evaluate the performance of mobile banking users from several banks to make continuous improvements.
c. Finally, it needs to ensure that it always educates mobile banking users from several banks about the benefits of using M-Banking technology to support financial transaction needs. Future research can be researched with other models such as UTAUT2 and combined with TTF, Trust, and Attitude.

5. References

[1] A. M. Baabdullah, A. A. Alalwan, N. P. Rana, H. Kizgin, and P. Patil, "Consumer use of mobile banking (M-Banking) in Saudi Arabia: Towards an integrated model," *Int. J. Inf. Manage.*, vol. 44, no. July 2018, pp. 38–52, 2019.

[2] A. M. Baabdullah, A. A. Alalwan, N. P. Rana, P. Patil, and Y. K. Dwivedi, "An integrated model for m-banking adoption in Saudi Arabia," *Int. J. Bank Mark.*, vol. 37, no. 2, pp. 452–478, 2019.

[3] A. Shankar, C. Jebarajakirthy, and M. Ashaduzzaman, "How do electronic word of mouth practices contribute to mobile banking adoption?," *J. Retail. Consum. Serv.*, vol. 52, no. August 2018, p. 101920, 2020.

[4] Y. K. Dwivedi, N. P. Rana, A. Jeyaraj, M. Clement, and M. D. Williams, "Re-examining the Unified Theory of Acceptance and Use of Technology (UTAUT): Towards a Revised Theoretical

[5] A. A. Alalwan, Y. K. Dwivedi, and N. P. Rana, "Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust," *Int. J. Inf. Manage.*, vol. 37, no. 3, pp. 99–110, 2017.Model," *Inf. Syst. Front.*, vol. 21, no. 3, pp. 719–734, 2019.

[6] M. Islam, "Data Analysis: Types, Process, Methods, Techniques and Tools," *Int. J. Data Sci. Technol.*, vol. 6, no. 1, pp. 10–15, 2020.

[7] M. Michaelides and A. Spanos, "On modeling heterogeneity in linear models using trend polynomials," *Econ. Model.*, vol. 85, no. April, pp. 74–86, 2020.

[8] J. Hair, C. L. Hollingsworth, A. B. Randolph, and A. Y. L. Chong, "An updated and expanded assessment of PLS-SEM in information systems research," *Ind. Manag. Data Syst.*, vol. 117, no. 3, pp. 442–458, 2017.

[9] B. M. Izzati, "Analysis of Customer Behavior in Mobile Food Ordering Application Using UTAUT Model (Case Study: GoFood Application)," *Int. J. Innov. Enterp. Syst.*, vol. 4, no. 01, pp. 23–34, 2020.

[10] M. Sciarelli, M. H. Gheith, and M. Tani, "The relationship between soft and hard quality management practices, innovation and organizational performance in higher education," *TQM J.*, vol. 32, no. 6, pp. 1349–1372, 2020.

[11] L. Lishomwa and J. Phiri, "Adoption of Internet Banking Services by Corporate Customers for Forex Transactions Based on the TRA Model," *Open J. Bus. Manag.*, vol. 08, no. 01, pp. 329–345, 2020.