

Generation Y's Behavior Intention in Using Mobile Banking Application

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Abstract: *Mobile Banking (M-Banking) is an application of Information Communication and Technology and banking area to improve the service in term of rapidness, security, and simplicity. Many of banking companies have been run this technology to improve their performance to assist customers. The paper aims to discover how the Generation Y's behavior in using M-Banking for various banking purposes. Theory of Planned Behavior was applied as the underpinning theory and model to explain the attitude, subjective norms, and perceived behavioral control towards the behavioral intention. A total of 300 citizens from Medan, Indonesia with different age range, occupation, and education level were selected as the respondent and Multiple Regression Analysis is employed as the data technique analysis. The result pointed out that all of the independent variables are influencing the dependent variable. Attitude is the most dominant factor in impacting the behavioral intention. As the conclusion, the study claimed that Theory of Planned Behavior is the proper theory to explain the behavioral intention in using M-Banking.*

Keywords: Theory of Planned Behavior, Mobile Banking, Generation Y, Behavioral Intention, Indonesia

1. Introduction

The utilization of Information and Communication Technology (ICT) in the banking sector is absurdly high in the past few years [1]. Companies are being in the running to give better services to the customers emphasize the rapid, safe, and enjoyable process of transactions. Mobile Banking (M-Banking) and Internet Banking as the samples of the ICT product were operated to assist customers in various banking purposes [2], [3]. The IB was firstly operated in Indonesia in 1998 by Bank International Indonesia (BII) whereas the M-Banking was first launched by Excelcom at the end of 1995. These two applications have the same purpose for the customer, an easier and simple platform to conduct the bank transactions neglecting where were their position. [4], [5]. In addition, the security of the system should be stressed due to the privacy of customers data and account that can be provokes the data manipulation or cybercrime [6]. According to BusinessTimes, the users of M-Banking in Indonesia are skyrocketed to 88 million users and illustrates the M-Banking is a designated platform to be used in banking sector. Especially, during the COVID-19 pandemic, the kind of *social distancing* applications are very useful and proper to be used to avoid direct interaction in banking process [7].

In term of the users' age, the young people are the most potential users of the M-Banking. These groups of people are very excited to use the M-Banking for their any kinds of work. Additionally, the social support is nonessential for them due to their individualistic aspect towards the technology [8]. Moreover, Indonesian Central Bureau of Statistics stated that Indonesian population is dominated by Generation Y with total of 69.38 million inhabitants and Generation Z with the 74.93 million inhabitants. The Generation Y or Millennial are the society with the range

age between 25 to 40 years old or people who have a birth year between 1981 and 1996. They are comprised of new graduates entering the workforce, workers, and some of them were senior employees. Hence, their behavior in using M-Banking is important to be investigated. Therefore, the study is scrutinizing the behavior of Generation Y in using M-Banking application.

2. Literature Review

2.1 Mobile Banking (M-Banking) Application

The nature of banking has been shifted into digital ways. In other words, traditional banking began to be left by customers then replaced by information technologies in automated forms including ATMs, Internet Banking, and Mobile Banking [9]. Hence, the advancement of mobile technologies and devices drives the M-Banking to be considered as prominent due to the ubiquity, convenience, and interactivity. Mobile Banking (M-Banking) is a medium interaction between a bank and customer through the mobile device which the mobile technology and financial services are met to allows easy access for banking activities [10]. In addition, the M-Banking application has been used in smartphones in Android, iOS, and Windows platforms due to the flourishing usage of smartphones among society [11].

In Indonesia, there are numerous bank companies whether state-owned enterprise or private those run the M-Banking with different performances and features. There are several services offered by the M-Banking to the customers, including mutation and balance checking, various payments and purchases, deposit activity, money transfer, and credit card affairs [12]. The mutation checking feature allows the customers to verify their latest transaction whereas balance

checking informs them regarding their account.

The payment feature allows the customer to pay Internet and home electricity bills, flight tickets, insurance, taxes, etc. Moreover, the purchase feature provides to put money into E-Wallet and E-Money top-up. Then, deposit and credit card dealings also can be settled online as well as the money transfer activity.

2.2 Theory of Planned Behavior (TPB)

Theory of Planned Behavior is a theory that usually referenced in studies related to individual’s thought to performing several works under his/her willing control. The theory explained that the individual’s most influential factor is the behavioral intention for making a decision to take an action or not[13].

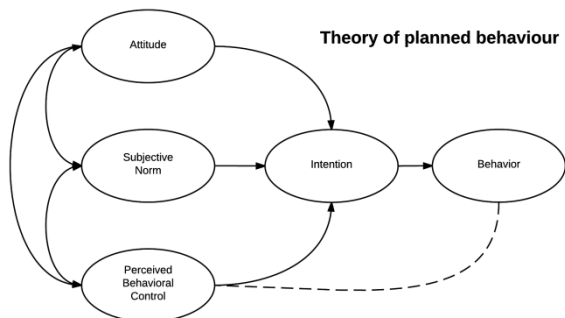


Figure 1: The Original Theory of Planned Behavior[14]

The theory consists of five main variables, namely Attitude, Subjective Norm, Perceived Behavioral Control, Intention, and Behavior. However, the variable of Behavioral Control and Intention usually combined together as the dependent variable. Hence, it becomes four main variables, namely Behavioral Intention (BI), Attitude (AT), Subjective Norms (SN), and Perceived Behavioral Control (PBC) [15]. Furthermore, in several studies the theory also usually used along with other theories or models. Aboelmaged and Gebba (2013) discover the Mobile banking adoption with the examination of Technology Acceptance Model (TAM) and TPB[16]. Then, Kumar, Israel, and Malik (2018)[17] conduct a study to investigate the customer’s continuance intention to use Mobile Banking apps by using TPB, Expectation and Confirmation Theory (ECT) and Self-determination theory [17]. A study by Sarfaraz (2017) employed TPB, TAM, and Unified Theory of Acceptance and Use of Technology (UTAUT) to discover the Mobile Banking adoption [18].

2.3 Related Studies

There are numerous researches that applied the TPB due to the wide explanation of individual’s behavior intention to do certain task. Additionally, the TPB is common to be used in M-Banking studies. Khasawneh and Irshaidat (2017) [19] conducted a study to discover the consumer behavior in relation to the applications of M-Banking. The finding pointed out that Subjective Norm and Perceived Behavioral Control are influencing the behavior. Furthermore, a research by Glavee-Geo et. al. (2017) [20] was explained the M-Banking services adoption through the TPB. The result came out with the significant relationship between the variables of Attitude and Perceived Behavioral Control toward the Behavioral Intention variable. In the same way, Dwivedi and Mir (2019) [21] reported a research by using TPB to investigate the M-Banking adoption. The study also claimed that Attitude and Perceived Behavioral Control have significant impact on the Behavioral Intention. Similarly, Rojanah (2020) [22] by her research also claimed that Behavioral Intention was influenced by Attitude and Perceived Behavioral Control. The study used the TPB and TAM to investigate the M-Banking usage. Shima and Mohamadali (2017) [23] by their study claimed that Perceived Behavioral Control is the only variable that has an impact on Behavioral Intention. On the other hand, Hong (2019) [24] stated that the Behavioral Intention to use the M-Banking is influenced by the Subjective Norm and Perceived Behavioral Control.

Moreover, Alam et. al. (2018) [25] conducted a study regarding the adoption of M-Banking among customers. The study used the TAM, Diffusion of Innovation (DOI), and TPB and found out that Attitude, Subjective Norm, Perceived Behavioral Control are significantly influencing the Behavioral Intention. A report by Marwanto (2019) employed both TAM and TPB as the research framework [26]. The study also revealed the similar result. All of the variables are significantly predicting the Behavioral Intention. In the same way, a study by Vuong, Hieu, and Trang (2020) [27] conducted an empirical analysis of M-Banking adoption. The finding also shown that Attitude, Subjective Norm, Perceived Behavioral Control are the predictor of the Behavioral Intention. Table 1 summarizes the studies that related to the TPB and M-Banking.

Table 1: Previous Studies Related to the TPB and M-Banking

Author (Year)	Title	Finding
Glavee-Geo et. al. (2017)	Mobile banking services adoption in Pakistan: are there gender differences?	AT and PBC → BI
Khasawneh and Irshaidat (2017)	Empirical validation of the decomposed theory of planned behavior model within the mobile banking adoption context	SN and PBC → BI
Shima and Mohamadali (2017)	Examining the factors affecting willingness to use electronic banking: the integration of TAM and TPB models with electronic service quality (case study: EghtesadNovin Bank)	PBC → BI
Alam et. al. (2018)	Integrating TPB, TAM and DOI theories: An empirical evidence for the adoption of mobile banking among customers in Klang valley, Malaysia	AT, SN, and PBC → BI
Dwivedi and Mir (2019)	Mobile Banking Adoption in India: Decomposed TPB Approach.	AT and PBC → BI
Hong (2019)	Understanding and predicting behavioral intention to adopt mobile banking: The Korean experience	SN and PBC → BI

Marwanto (2019)	PengaruhMinatIndividuTerhadapPenggunaan Mobile Banking (M-Banking): Model Kombinasi Technology Acceptance Model (TAM) Dan Theory Of Planned Behavior (TPB)	AT, SN, and PBC → BI
Rojanah (2020)	PerilakuNasabahTerhadapLayanan Mobile Banking PerbankanSyariah: Ekstensi Technology Acceptance Model (TAM) dan Theory Of Planned Behavior (TPB)	AT and PBC → BI
Vuong, Hieu, and Trang (2020)	An empirical analysis of mobile banking adoption in Vietnam	AT, SN, and PBC → BI

According to Table 1, all the variables (AT, SN, and PBC) are influencing the BI even there are some studies are not agreed with that. Nevertheless, this study proposes three hypotheses regarding the behavior intention in using M-Banking as illustrated in Figure 1, namely:

- 1) Hypothesis 1 (H1): Attitude (AT) is significantly influencing behavioral intention (BI).
- 2) Hypothesis 2 (H2): Subjective norm (SN) is significantly influencing behavioral intention (BI).
- 3) Hypothesis 3 (H3): Perceived Behavioral Control (PBC) is significantly influencing behavioral intention (BI).

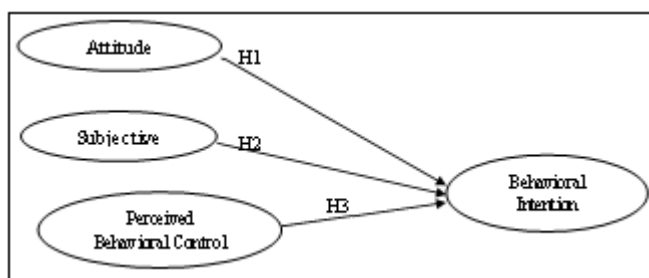


Figure 1: Research Framework

3. Research Methodology

3.1 Population and Samples

This research focuses on how the behavior intention of Generation Y or millennials to use the M-Banking. Generation Y or millennials are a group of society born in the development of computers and the Internet. They have used a lot of communication technology such as email, SMS, instant messaging, and social media in their daily lives [28]. Furthermore, APJII as the Indonesian Internet association stated that more than the Internet users were dominated by young age refers to the data from the infographic report on penetration and behavior of Indonesian Internet users. APJII also stated that Sumatra is the region with the highest Internet penetration at 19.09%, of which Medan is the largest city on the island. So, this study arranges the population which is the citizens with the range age between 25 to 40 years old in the city of Medan. Based on data from the Medan City Government, the population is based on age group 25 to 40 years range up to more than 500,000 inhabitants and indicates that the young people or adolescents the most dominant group in Medan. However, the study was not selecting all the group of population as the object of the study. Thus, there are sub-groups or parts of the population that are used as objects in research, which are called the samples[29]. The number of samples used in a study must be representative of the population.

Accidental Sampling is a sampling technique based on chance, that is, consumers who accidentally / incidentally meet with researchers can be used as samples, if they are

considered suitable as data sources [30]. Hence, the research used the Accidental Sampling technique to determine the sample. Then, this study took a sample of 300 respondents to fulfill the sample size.

3.2 Data Collection Method

The study uses the primary data which is distributed directly to all respondents by using online means. As quantitative research, the study results obtained come from the questionnaires based on the survey results, in which the Likert scale is used for the determination. The survey was conducted online to respondents in Medan, Indonesia. There are about 300 questionnaires that have been distributed among respondents with the range age between 20 and 45 from. All respondents in this study were voluntary and anonymous. The questionnaire is divided into two main sections. The first section consists of the research instrument which is adopted from research conducted by Hong (2019)[24] with a total of 15 questions. The questions are including AT variable with 4 questions, SN with 4 questions, PBC variable with 3 questions, and BI with 4 questions which are summarized into one part of the question. On the other hand, the second section consists of a set of questions regarding their demographics, including gender, age, occupation, and education level. The ages on the questionnaire in this study ranged from 20-24 years old, 25-30 years old, 31-35 years old, and 36-40 years old. The occupation is divided into 4 answer choices, namely: Student, Employee, Entrepreneur, and Unemployment. Then, the education level is divided into 3 answer choices, namely: High School Graduate, Bachelor Degree, and Master Degree. Furthermore, the next part of the questionnaire consists of five parts, to examine the responses on four independent variables and one dependent variable. These four sections include attitudes towards online consumer behavior, subjective norms, perceived behavior control, beliefs, and behavioral intentions in online shopping. Respondents were asked to answer questions with each questionnaire item based on a Likert type scale, namely with the answers: Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree.

3.3 Instrument Test

The study tests the instrument in terms of validity, reliability, and test classic assumptions before entering into regression, as a data analysis technique. The validity of the measuring instrument was tested using the Pearson correlation on the value of each item with the mean value of the items in each variable. The results of validity test of each variable used in this study can be seen in the Table 2.

Table 2: Validity Test.

Item	Mean_AT	Mean_SN	Mean_PBC	Mean_BI
AT1	0.809**			
AT2	0.814**			
AT3	0.844**			
AT4	0.827**			
SN1		0.851**		
SN2		0.914**		
SN3		0.895**		
SN4		0.827**		
PBC1			0.922**	
PBC2			0.858**	
PBC3			0.877**	
BI1				0.909**
BI2				0.851**
BI3				0.820**
BI4				0.929**

Table 2 shows that each variable have a high value and has a significant positive value (**). Hence, it can be concluded that this study has a proper validity. Moreover, the instrument reliability was tested using Cronbach Alpha (α) by the consideration that the value of each variable should be greater than 0.7 [31]. The results of reliability test are shown in Table 3.

Table 3: Reliability Test

Variable	Total Item	Cronbach Alpha (α)
AT	4	0.882
SN	4	0.890
PBC	3	0.791
BI	4	0.903

Table 3 shows that all variables have a fairly high alpha (α) value, which is between 0.791 and 0.903. Hence, it can be concluded that the instruments has an excellent reliability. Besides, the validity and reliability tests, the study also tested the normality, multicollinearity, and heteroscedasticity as tests of classical assumptions. The normality test was employed the Kolomogrov-Smirnov test where the significance was 0.002, which means it was below 0.05 and illustrate inadequate of normality problem. Then, multicollinearity test was carried out by finding out whether there is a multicollinearity disorder with the Tolerance, Variance Inflation Factor (VIF) value as listed in Table 4.

Table 4: Reliability Test

Variable	Collinearity	
	Tolerance	VIF
AT	0.477	5.182
SN	0.561	6.690
PBC	0.304	4.995
BI	0.482	5.405

Based on Table 4, Tolerance value for each variable is more than 0.10 and indicates that there is no multicollinearity problem in the regression model. Then, the VIF value for each variable has a value that is below than 10 and also indicates that there is no possibility of multicollinearity problems. Thus, it can be concluded that this study is free from multicollinearity problems. Furthermore, the heteroscedasticity test was carried out by using the scatter plot method as shown in Figure 2.

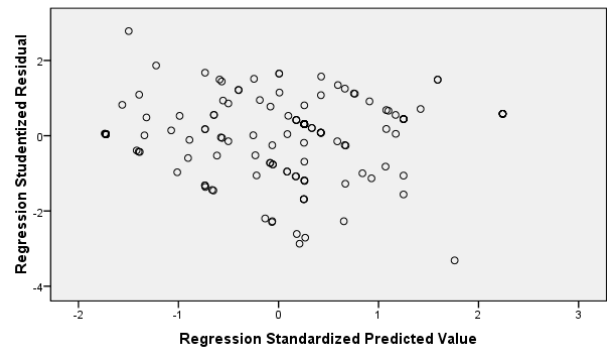


Figure 2: Scatter Plot

Figure 2 shows that there is no certain pattern on the graph and the dots are spreading and widening, so it can be concluded that the data we have does not have a heteroscedasticity problem. Therefore, the instrument of the study has met the requirements for testing the classical assumptions, the reliability, and the validity.

4. Results and Findings

4.1 Overview of Data Gathered

The research has been collected a total of 300 respondents with a hundred percent of the response. In terms of gender, most of the respondents are female with a total of 162 participants (55.7%) and 138 of them are male (44.3%). Then, the majority of respondents are 25 to 35 years old, namely 25-30 years old as 122 participants (40.67%) and 31-35 years old as 109 participants (36.33%), followed by the youngest (i.e. 20-24 years old) as 46 respondents (15.33%). There are only 23 participants (7.67%) of respondents with the range age between 36-40 years old. In terms of education level, a total of 25 respondents are students (8.33%), 129 of them are employees (43%), 137 of them are entrepreneur (45.67%), and little of them are unemployment (3%). Then, a total of 82 respondents are high school graduates (27.3%), 16 respondents are master's degree level (5.3%), and 202 of them are bachelor's degree level (67.3%). A summary of the demographic of the respondents is shown in Table 5.

Table 5: Respondents' Demographic

Variable	Category	Frequency	Percentage
Gender	Male	138	44.3
	Female	162	55.7
Age	20 – 24	46	15.3
	25 – 30	122	40.6
	31 – 35	109	36.3
	36 – 40	23	7.67
Occupation	Student	25	8.3
	Employee	129	43
	Entrepreneur	137	45.6
	Unemployment	9	3
Education level	High School Graduate	82	27.3
	Bachelor Degree	202	67.3
	Master Degree	16	5.3

4.2 The Usage Level

The study also explores the level of M-Banking usage among respondents. The mean scores of the BI variable from

each demographic were confirmed to determine the usage level. Table 6 shows the resume of the M-Banking usage level.

Table 6: The M-Banking Usage Level

Variable	Category	Mean Score
Gender	Male	3.481
	Female	3.692
Age	20 – 24	2.960
	25 – 30	3.866
	31 – 35	4.167
	36 – 40	3.355
Occupation	Student	3.469
	Employee	4.233
	Entrepreneur	4.010
Education level	Unemployment	3.128
	High School Graduate	3.288
	Bachelor Degree	4.113
	Master Degree	3.450

As shown in Table 6, female respondents are more dominant than male with the mean score 3.692 > 3.481. Then, respondents with age range between 31 to 35 years old are the have the highest mean score (4.167) whereas youngest age participants (20-24 years old) have only 2.960 of the mean score. Moreover, employees and entrepreneurs are the highest intention to use M-banking, with the mean score as 4.233 and 4.010. In term of education level, all of the categories are have the high mean score.

4.3 Hypothesis Test

The hypothesis test was carried out by using multiple linear regression analysis. There are two important items in a multiple linear regression interpretation, the R value is used to induce an understanding of how much variation in the dependent variable is caused by the variable. Then, the R² value is used to indicate the percentage of variation in the dependent variable explained by the combination of all independent variables. Furthermore, the variable beta (β) is used to measure the strength of the independent variable affecting the dependent variable. The greater the absolute value of the beta value the more certain independent variables are responsible for explaining the dependent variable[32]. In this study, the variables of AT, SN, and PBC act as independent variables, while the BI variable acts as the dependent variable as shown in Figure 1. The results of the regression analysis can be seen in Table 7.

Table 7: Reliability Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.733 ^a	0.537	0.558	.68013

Table 7 shows that the value of R² is 0.537 and indicates that 53.7% of millennial behavioral intentions in using M-Banking are influenced by the factors proposed by this study. Then, the study utilize the sig value to test the hypothesis with the consideration test result value must be below the value of 0.05 (α). The following are the results of the coefficients obtained in this study.

Table 8: Respondents' Demographic.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error			
(Constant)	-.111	.168		-.658	.511
AT	.559	.097	.513	5.788	.000
SN	.199	.099	.185	2.010	.046
PBC	.195	.078	.182	2.563	.011

As shown in Table 8, the Attitudes of respondents is positively affecting Behavioral Intentions in using M-Banking based with the level of significance (β = 0.559 and p = 0.000 < 0.05). Thus, Hypothesis 1 (H1) can be accepted. Then, the Subjective Norm factor has a tolerable level of significance (β = 0.199 and p = 0.046 < 0.05), which indicates that Generation Y's M-Banking usage behavior intentions are influenced by social relationships. Therefore, Hypothesis 2 (H2) is also accepted. In addition, this study also reveals that respondents' behavioral control in using M-Banking is influencing their behavioral intention, this is verified by the level of significance (β = 0.195 and p = 0.011 < 0.05) of the variable and supports Hypothesis 3 (H3). The summary of the results of hypothesis testing can be seen in Table 9.

Table 9: Reliability Test

	Hypothesis	Decision
H1	Attitude (AT) is significantly influencing behavioral intention (BI)	Accepted
H2	Subjective norm (SN) is significantly influencing behavioral intention (BI)	Accepted
H3	Perceived Behavioral Control (PBC) is significantly influencing behavioral intention (BI)	Accepted

5. Conclusion

Theory of Planned Behavior is one time successfully explaining the individual behavioral intention to use kinds of technology, especially the M-Banking. All of the proposed hypotheses are accepted. Attitude is the most powerful influence on M-Banking intentions. Generation Ys are believed that M-Banking is the right way to assist them in various banking purposes. Thus, the results of this study follow previous studies regarding the relationship between attitudes and behavioral intentions [20]–[22], [25]–[27]. Then, the Subjective Norms are considered to influence millennials to use M-Banking. Thus, the results of this second variable are in line with other previous researchers [19], [24]–[27] and concluded that subjective norms influence behavioral intention. Perceived behavior control variable is proven to have a significant effect on M-Banking behavior among millennials. They argue that M-Banking has good operational features and integrity in various banking purposes. The results of this study are in line with previous studies [19]–[27].

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