

## Determinants of the Use of Electronic Money (e-money) among Muslim Professionals in Medan City

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### Abstract

*This article analyzes the factors that influence the behavior of new products with a case study of electronic money which is considered a new product category of payment tools in Indonesia. This study integrates the Theory of Acceptance Model (TAM) and Theory of Planned Behavior (TPB). This study is descriptive and exploratory quantitative research. Data was collected on Muslim professionals in Medan city. Structured Equation Modeling (SEM) is used to test the hypothesis in terms of evaluating the effect of the hypothesis research. The results found that the behavior of electronic money is influenced by attitude, perceived behavior control, and subjective norm.*

### Keywords

e-money; technology acceptance model (TAM); theory of planned behavior (TPB), attitude; intention to use



## I. Introduction

Payment systems and patterns of economic transactions are constantly changing. Technological advances in the payment system have shifted the role of cash (currency) as a non-cash payment instrument that is more efficient and economical (Pramono, 2006). This electronic card was created to make it easier for the public to transact. In the past, before the emergence of the electronic payment system, even when we transacted, we had to meet with the parties we invited to transact, after the emergence of this electronic payment system we were able to save costs, as well as get practicality and convenience in transacting. In this case, banks are competing to innovate in electronic payment systems, including debit cards, ATM cards, credit cards, smart cards, e-money, and others.

The banking world has utilized information technology in daily banking operations, known as the Banking Application System. The application of information technology in the banking sector is expected to provide a comparative advantage for each bank so that their products and services are relatively competitive in the market. The banking industry in Indonesia is one of the economic sectors that is experiencing relatively very dynamic development compared to other economic sectors, intending to mobilize public funds as well as increase efficiency in the banking sector and financial institutions.

Digitalization of Islamic banks can strengthen efficiency and encourage the use of profit-sharing contracts in financing distribution. So far, Islamic bank financing is perceived as more expensive than conventional banks. This happens because the financing contracts used are still mostly murabahah or buying and selling contracts. The difficulty of measuring risk prevents the use of a fairer profit-sharing contract from developing. Through digitization, banks can obtain better data quality to strengthen credit analysis.

Adequate digitalization in the Islamic finance and banking sector is a necessity. According to the Financial Services Authority (OJK, 2021), this will lead to the target of achieving market share growth in Islamic finance, which is targeted at 20 percent, while the figure that has been realized is only 6.9 percent of the total proportion of the national financial and banking market. This condition is certainly influenced by the level of Islamic

financial inclusion which is still weak at around 6.1 percent in 2020. This achievement is still far behind the national financial inclusion rate of 76.10 percent. This is directly proportional to the Islamic financial literacy index which is also still low, which is only 8.93 percent of the national literacy index of 38.03 percent.

As a financial institution, most of which funds come from surplus units, Banks are required to manage these funds professionally and reliably. The role of the banking world requires the support of human resource capabilities as well as more effective and efficient handling of Bank operations as well as providing supporting facilities that facilitate financial transactions for customers such as non-cash payment facilities.

The high Muslim population in Indonesia is not in line with the share and growth of national Islamic finance. There are at least three Islamic financial problems (OJK, 2021). First, is the low literacy of Islamic finance. The OJK survey stated that the level of Islamic financial literacy of the Indonesian people was relatively stagnant throughout the 2016-2019 period. In fact, according to Bank Indonesia's sharia economic literacy index (BI, 2021), only 16 out of 100 Muslims understand the basic principles of sharia economics, sharia social finance, and halal products/services. Second, the assets of Islamic financial institutions are not as strong as conventional financial institutions. According to OJK statistics in June 2021, the share of Islamic commercial banks' assets is only 4.3% of the total commercial banks. This has implications for expansion capabilities both in terms of networks, services, and infrastructure. Third, the limitations of information technology infrastructure and human resources. In the digital era, the combination of HR and information technology will have implications for product and service innovation and development. As a result, Islamic financial products cannot meet increasingly high public expectations.

The phenomenon that occurs in the development of electronic money in the industrial era 4.0 has brought many conveniences to the millennial generation in various aspects of their lives. Millennials in their daily activities often rely on electronic money as a payment mechanism at several shopping centers such as Indomaret and Alfamart. So, the trend of using electronic money influences their daily activities.

The economic condition of the population is a condition that describes human life that has economic score (Shah et al, 2020). In the perspective of Islamic economics, the law of transactions using e-money is halal, this halalness is based on fiqh rules: "Basically, all forms of muamalah are permissible unless there is evidence that forbids it". This implies that Islamic law provides broad opportunities for the development of new forms and types of mu'almaat following the development of the needs of people's lives, including economic transaction activities in banking. The rule explains that all muamalah transactions are legal unless there is a proposition that forbids it, therefore electronic money must meet the criteria and provisions following the basic principles and values of Islamic economics (Sahroni, 2017).

Based on the 2020 Indonesian Population Census, the population of Medan city is 2,699,106 people. The population of this Medan city consists of 1,278,611 males and 1,420,495 females. Most of the residents of Medan are from the 0-19 and 20-39 years age groups (37.8% and 41% of the total population, respectively).

Judging from the age structure of the population, Medan is inhabited by approximately 1,641,401 people who are Muslims. Furthermore, judging from the level of education, the average length of schooling of the population has reached 10.5 years. Thus, relatively enough manpower is available to work in various types of companies, both services, trade, and manufacturing industries. However, the fact is that electronic ultrasound is still very taboo among the public. Electronic money is a new thing that has

not received an important position in the community. There are still many Muslim residents in the city of Medan who do not understand the use of money. Some argue that electronic money makes transactions easier.

Based on the statement above, the researcher raised a case study regarding the behavior of using professional electronic money in the city of Medan. And from the interview, it can be concluded that there are still few people who know in detail about electronic money. One of the factors a person in deciding something is the knowledge they have. This is following the correspondence inference theory developed by Jones & Davis from Heider theory (field theory) and cognitive theory. This theory is classified in the transorientational theory which this theory suggests that knowledge and abilities are prerequisites for setting intentions (decisions). Thus, to measure the influence of the behavior of the people of Medan, especially among the Muslim professional community of Medan City, it is necessary to do it through the distribution of questionnaires.

TAM and TPB are used as baseline models that present a conceptual model to analyze the factors that influence the behavior of using electronic money. Furthermore, the hypothesis on individual behavior to use electronic money is largely determined by TAM beliefs (perceived ease of use and perceived usefulness of usefulness) and attitudes towards using electronic money services. Meanwhile, to complete the TAM model, other constructions are used, namely the normative TPB model and belief control (subjective norms and behavioral control).

## **II. Review of Literature**

### **2.1 Technology Development**

The rapid development of information technology in this day and age makes the trend of people's lives change and are increasingly dependent on the presence of information technology which makes things easier, more effective, efficient, and considered more economical than the lifestyle before the existence of information technology. The application of information technology has been widely used in people's daily activities, this is indicated by the presence of various kinds of information technology facilities developed for the community. In this regard, the payment system used by the Indonesian people has also developed. Currently, money is not only in physical form (cash), but there is a technology that makes money into an intangible object (non-cash) such as electronic money or what is commonly called e-money (Suwandi, 2018).

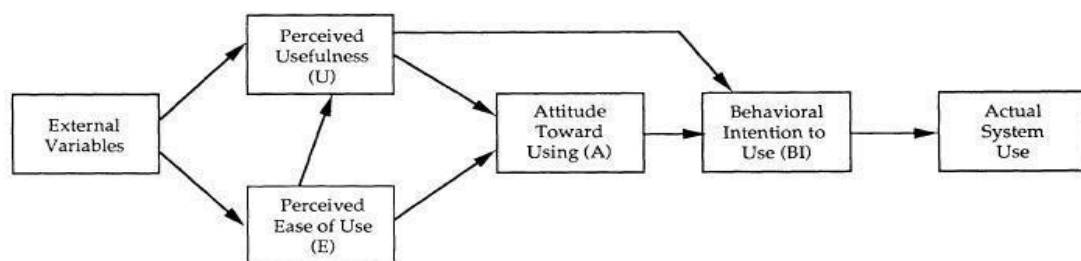
Electronic money is the latest cashless payment mechanism. Electronic money (e-money) has quality compared to other non-cash payment mechanisms, namely prioritizing various aspects such as speed, facilities, and accuracy in using electronic money to pay for transactions made by electronic money owners and sellers (Parastiti, 2015).

Several electronic payment instruments are currently developing such as mobile banking and digital payments. This study discusses the main issues in electronic payment systems including electronic payment system innovation, where the value of money in electronic money is the amount of money deposited in advance by the money cardholder. electronic money to the issuer of electronic money. The amount of money deposited to the issuer of electronic money is then stored electronically on a server or chip, and the value of the money can be transferred according to the interests of the payment transaction. The amount of money stored in non-saving electronic money as referred to in Law Number 10 of 1998 concerning Banking and Law Number 21 of 2008 concerning Islamic Banking, does not earn interest on its deposits and is also not guaranteed by the Deposit Insurance Corporation (LPS).

Electronic money can be distinguished from other card-based electronic payment instruments such as debit cards and credit cards. Debit cards and credit cards are cards with the characteristics of access products, where one of the characteristics is that a debit card or credit card conducts transactions online and is connected to the card issuer's computer. Meanwhile, electronic money (e-money) is a non-cash payment instrument that has the characteristics of Prepedi Products, where transactions are not made online and are connected to the card issuer, but are carried out offline at the merchant terminal. The velocity of money (velocity of money) is the average number of transactions in the circulation of money in a year, using units of currency to buy the total goods and services produced in the economy. The theory discusses the relationship between the money supply and the total production of goods and services (GDP). The acceleration of the use of electronic money depends on institutions that play a role in the economy to influence individual consumers in the transaction procedure.

## 2.2 TAM and TPB

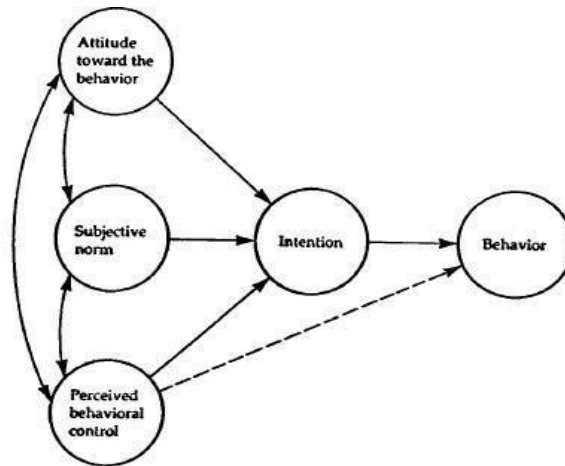
Developed based on the two theories of TRA & TPB, TAM was developed into a model that has the main focus on adopting new technologies by an organization, community, company, or in a broader context is on technological developments in a country for market development and more advanced economic growth. (Clantone, 2006). Since its introduction by Davis, TAM has been widely used by researchers to explain user acceptance of technology. Although TAM was designed to predict user adoption of information technology applications in workplace organizations, many researchers have modified the original model to explain many needs, such as trust-enhanced TAM, TAM and Risk Perception, TAM, and motivation, TAM and Culture.



**Figure 1.** *Technology Acceptance Model (TAM)*

In TPB there are three main factors as determinants of interest, first is the attitude that reflects the extent to which the individual has an assessment of agreeing or disagreeing with the behavior. Second, social factors, also called subjective norms, lead to perceived social pressure to perform or not to perform the behavior. Lastly is behavioral control, which refers to the perceived ease or difficulty of performing a behavior.

Behavioral controls are included as additional determinants of interest and behavior. It is intended for situations where people do not have complete control over their behavior. TRA states that behavior can be influenced by factors other than just personal interest to perform the behavior and the opinions of others about behavior (subjective normal). These other factors refer to the number of required opportunities and resources, such as time, money, skills, and the cooperation of others (Harrison, 1997). The extent to which a person has the time, skills, and money will determine the interest to perform certain behaviors in this case to use and adopt services. So, interest and availability of resources and opportunities together determine whether a behavior is done or not to be done.



**Figure 2.** *Theory of Planned Behavior (TPB)*

Ajzen showed that attitudes, subjective norms, and perceived behavioral control were positively related to interest in behavior. Interest in such behavior will predict the actual behavior of consumers. In its development, many studies have confirmed that TPB interest predicts behavior more accurately than TRA (Ajzen, 1998).

### III. Research Method

According to Sugiyono (2017), the research method is a scientific way to obtain data with certain uses. The research method used by the author in this study is an explanatory research method using a quantitative approach. According to Sugiarto (2017), explanatory research is research that has the aim of formulating a new hypothesis concerning the problem under study. An explanatory research method with a quantitative approach is used to find out the casual explanation of exogenous variables, namely attitude, subjective norm, and perceived behavioral control, towards endogenous variables, namely behavior through intervening variables, namely interest. using electronic money (intention to use).

According to Unaradjan (2019) "the sample is part of the population that has certain characteristics or conditions to be studied". According to Yusuf (2017) "the sample is part of the selected population and represents the population". The sampling technique used in this research is non-probability sampling – convenience sampling. Non-probability sampling means that the sampling technique that is carried out is not universally valid so it does not provide a good chance for each member of the population to be selected as a sample. While convenience sampling is used, the sampling technique is based on the consideration of the researcher for later problems so that the sampling is carried out over time. Data collection was carried out by sharing the google form link which contained the respondent's head questionnaire.

Data collection techniques are methods or methods used to collect data. The method refers to a way of collecting data so that it can be shown whether its use is through questionnaires, interviews, observations, tests, documentation, and so on.

The technique used in analyzing the data is the Structural Equation Modeling (SEM) method with the help of the LISREL (Linear Structural Relationship) program version 8.80.



## IV. Results and Discussion

### 4.1 Results

#### a. Research Statistical Model Fit Test

**Table 1.** Overall Model Fitment Test Results

GOF Size	Target - Conformity Rate	Estimated Result Conformity Level	
Chi-Square	Small value	175.76	Less fit
P	$P > 0.05$	(p=0.00)	
NCP	Small value	103.82	Less fit
Intervall	Intervall yg sempit	(61.18; 154.38)	
RMSEA	$RMSEA \leq 0.08$	0.075	<i>Good fit</i>
P(close fit)	$P \geq 0.05$	0.44	
ECVI	Small value and close to salturalted ECVI	$M^* = 2.00$ $S^* = 2.43$ $I^* = 43.41$	<i>Good fit</i>
AIIC	Small value and close to salturalted AIC	$M^* = 416.81$ $S^* = 506.00$ $I^* = 9030.11$	Less fit
CAIIC	Small value and close to CAIC	$M^* = 677.35$ $S^* = 1604.61$ $I^* = 9125.64$	Less fit
NFI	$NFI \geq 0.90$	0.97	<i>Good fit</i>
NNFI	$NNFI \geq 0.90$	0.98	<i>Good fit</i>
CFI	$CFI \geq 0.90$	0.99	<i>Good fit</i>
IFI	$IFI \geq 0.90$	0.99	<i>Good fit</i>
RFI	$RFI \geq 0.90$	0.96	<i>Good fit</i>
CN	$CN \geq 200$	164.72	Less fit
SRMR	Stalndalrdized RMR $\leq 0.05$	0.076	Less fit
GFI	$GFI \geq 0.90$	0.89	<i>Malrginall Fit</i>
AI GFI	$AI GFI \geq 0.90$	0.85	<i>Malrginall Fit</i>

From table 1. it can be seen that 6 GOF sizes show a poor fit, while 7 GOF sizes show a good fit and the other 2 GOF sizes show a fairly good (moderate) fit. So we can conclude that the overall fit of this model is a good fit. The overall fit of the model is stated to be good and can also be seen by referring to the RMSEA which states good fit and GFI which states marginal fit.

## b. Measurement Model Analysis

**Table 2.** Description of Standardized Loading Factor and T-Values

Var	A		SN		PBC		ITU		B		Kesimpulan
Latent Var	SLF*	Nilai-t	SLF*	Nilai-t	SLF*	Nilai-t	SLF*	Nilai-t	SLF*	Nilai-t	Validitas
Teramat											
A1	0.69	6.51									Baik
A2	0.66	6.29									Baik
A3	0.87	3.59									Baik
A4	0.52	2.52									Baik
SN1			0.58	6.20							Baik
SN2			0.75	7.74							Baik
SN3			0.60	6.22							Baik
PBC1					0.95	2.06					Baik
PBC2					1.19	2.77					Baik
PBC3					0.87	2.03					Baik
ITU1							0.76	**			Baik
ITU2							0.90	9.42			Baik
ITU3							0.69	8.03			Baik
B1									0.57	**	Baik
B2									0.96	7.19	Baik
B3									0.82	7.27	Baik

Source: Survey results, processed using LISREL version 8.80

From table 2. it can be concluded that:

- All variable factor load t-values  $> 1.96$ , so the factor loading of the variables in the model is significant or not equal to zero.
- By using the standard factor load of 0.50, then all the standard factor loads (SLF) of the model can be said to be good.

**Table 3.** Model Reliability Analysis

Variabel	CR	VE	Conclusion Reliability
A	$0.83 \geq 0.7$	$0.50 \geq 0.50$	Good
SN	$0.9 \geq 0.7$	$0.75 \geq 0.5$	Good
PBC	$0.92 \geq 0.7$	$0.79 \geq 0.5$	Good
ITU	$0.88 \geq 0.7$	$0.76 \geq 0.5$	Good
B	$0.96 \geq 0.7$	$0.88 \geq 0.5$	Good

Source: Survey results, processed using LISREL version 8.80

From table 3, the summary of CR values from LISREL processing for all variables is above 0.7 and for all VE values from LISREL processed products, the value is equal to or above 0.5. So it can be concluded that all research variables have good reliability.

## c. Structural Model Analysis

**Table 4.** Results of Research Hypotheses

Hipotesis	Standarize	Nilali-t	Conclusion
A1 $\square$ ITU	0.10	3.02	Significant (Hypothesis received)
SN $\square$ ITU	0.15	5.24	Significant (Hypothesis received)
PBC $\square$ ITU	0.20	4.17	Significant (Hypothesis received)

ITU $\square$ B	0.52	4.60	Significant (Hypothesis received)
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Source: Survey results, processed using LISREL version 8.80

## 4.2 Discussion

### a. The Effect of the User's Attitude on the Interest in Using Electronic Money (Intention to Use)

Based on the results of the study, shows that the attitude of electronic money users affects the interest in using electronic money (intention to use) of the respondents and the effect is significant. This is in line with Davis' theory (1989), that a person's positive or negative attitude stems from the perceived usefulness and perceived ease of use that will affect the interest of actors in the new technological system.

In this case, the good interest in using electronic money (intention to use) from the respondents will form a positive attitude towards the use of electronic money. According to sharia principles, Hashanah is goodness and pleasure that is obtained by humans. Uswatun Hasanah can be interpreted as a noble attitude/behavior that is a role model for mankind.

The same results were obtained in Annisa's research (2021), that usage attitudes have a significant influence on interest in using electronic money. However, the results are different from Nugroho's research (2019) which found that IPB students using electronic money showed that the attitude variable had no significant effect on interest in using electronic money.

### b. The Effect of Subjective Norm on Interest in Using Electronic Money (Intention to Use)

Based on the results of the study, shows that the subjective norm has a positive significant effect on the interest in using electronic money (intention to use). This is in line with Davis' theory (1989), that the role of subjective norms is very important in the implementation of electronic money because people use electronic money to provide added value in improving social reputation.

Islam teaches that all humans are brothers. Fellow Muslims are brothers and one's faith has not been perfected until he loves his brother more than he loves himself. This encourages people to create good relationships between individuals and society through the concept of community guarantees or takaful.

The same thing was found in Nugroho's research (2019) which showed that subjective norms had a significant influence on interest in using electronic money. The role of subjective norms is very important in the implementation of electronic money among Muslim professionals in Medan City because people use electronic money to provide added value in improving social reputation. If his family, friends, and surroundings use electronic money, he will be encouraged to use it as well.

### c. The Effect of Perceived Behavior Control on Interest in Using Electronic Money (Intention to Use)

Based on the results of the study, shows that perceived behavior control has a positive significant effect on interest in using electronic money (intention to use). This is in line with Ajzen's (1991) theory, explaining that behavioral control refers to the perception of the ease or difficulty of performing a behavior. Behavioral controls are included as additional determinants of interest and behavior. It is intended for situations where people do not have complete control over their behavior. Perceived behavior control (perceived behavior control) that is well received by respondents will affect the interest in using



electronic money (intention to use) which is positively accepted by respondents towards electronic money.

In Islam, behavioral control is termed mujahadah and nafs. Behavioral control is the same as controlling one's passions, emotions, etc. Behavior control in Islam is part of patience. Imam Al-Ghazali explained good behavior control will produce a person's character strength.

The same thing was found in Indriyati's research (2019), which showed that perceptions of behavioral control had a significant influence on interest in using electronic money. Positive behavioral control on interest in using electronic money explains that people who use electronic money have good knowledge, abilities, and resources which ultimately affect people's interest in using electronic money.

#### **d. The Effect of Interest in Using Electronic Money (Intention to Use) on User Behavior of Electronic Money**

Based on the results of the study, shows that the interest in using electronic money (intention to use) has a positive significant influence on behavior (behavior). This is in line with Ajzen's (1991) theory, that interest in such behavior will predict the actual behavior of consumers. Interest plays an important role in determining human actions. Thus, the stronger the intention of Muslim professionals to conduct behavior using electronic money, the more likely the intention is to be actualized in the form of behavior. In Islam, Islamic behavior can be seen from the actions taken based on belief in Allah SWT following Islamic teachings. The sharia principle in user behavior is the Khilafah.

The same thing was obtained in Perengki's research (2019), which showed that interest in using electronic money had a significant influence on user behavior. However, this is different from Hendy's (2019) research which shows that interest in using electronic money does not have a significant effect on user behavior.

### **V. Conclusion**

Based on the results of the study, it was concluded that the attitude variable had a positive and significant effect on the interest in using electronic money so that the better the attitude of the user-perceived by the professional Muslim in Medan, the higher the interest in using electronic money. The subjective norm variable has a positive and significant effect on interest in using electronic money, so the better the subjective norm perceived by professional Muslims in Medan city, the higher interest in using electronic money will be. Behavioral control variables have a positive and significant effect on interest in using electronic money, so the better the behavioral control felt by professional Muslims in Medan city, the interest in using electronic money will be even better. The variable of interest in using electronic money has a positive and significant effect on usage behavior, so the better the interest in using electronic money that is felt by professional Muslims in Medan City, the behavior of the user will be better too.

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