

The Effect of Financial Literacy and other Determinants on the Intention to Use Electronic Money: Consumer Behavior as a Variable Mediation

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ABSTRACT

The purpose of this study is to investigate how financial literacy and other determinants affect the intention to use electronic money with consumer behavior as a mediating variable. The other determinants are financial capabilities, perceived benefits, and perceived ease of use. The data were collected by distributing questionnaires and analyzed using path analysis. The findings indicate financial literacy, financial capability, perceived benefits, and perceived ease of use directly influence the intention to use electronic money. Moreover, consumer behavior is able to mediate the influence of financial literacy, financial capability, and perceived ease of use, yet unable to mediate the effect of perceived benefits on intention to use electronic money.

Keywords: Consumer Behavior, Electronic Money (E-Money), Financial Literacy

JEL Classification: B26, G00, D10

INTRODUCTION

The advances of technology incredibly support local area exercises in different areas. The utilization of innovation makes it simpler for the users to complete their activities, build up their business, and facilitate their learning interaction. One of the fields that is experiencing rapid technological development is the financial sector. The use of digital technology in this sector is often referred to as financial technology (Fintech). Fintech is a service that provides financial products by utilizing information technology (Ansori, 2019).

Bank Indonesia classifies financial technology into four categories. They are 1) peer to peer lending (P2P), 2) market aggregator, 3) risk management and investment, and 4) payment, settlement, and clearing administration. P2P is a loan service for the community that comes from that community themselves or from service company providers (Pambudi, 2019). This fintech brings together lenders (investors) and loan seekers in one platform, for example, Modalku, Investree, and KoinWorks. Market aggregator is one of the fintech services that provide a variety of financial service information that consumers can use to help make decisions. It provides product comparisons ranging from prices, features to benefits. Fintech of risk management and investment provides financial planning services and e-trading and e-insurance platforms, such as Bareksa, Investree and Online-Taxes. Fintech of payment, clearing and settlement is a product that provides payment system services organized by the banking industry and carried out by Bank Indonesia, for example, Go-Pay, OVO, or Doku. Payment, clearing and settlement were directed in Bank Indonesia Regulation Number 18/40/PBI/2016 concerning the Implementation of Payment Transaction Processing. This regulation aims to support the creation of a smooth, safe, efficient, and reliable payment system by prioritizing the fulfilment of prudential principles and adequate risk management (Hutabarat, 2018).

Electronic money (e-money) is a product of Bank Indonesia, which is a part of the development of financial technology. It is a type of non-cash payment that makes transactions easier to do with guaranteed security and speed for users. At present, there are two sorts of electronic cash, namely chip-based electronic money and server-based electronic money. Chip-based electronic money is generally in the form of cards, such as Flazz and Brizzi. The server-based electronic money is generally applications like Go-Pay, OVO, and LinkAja. Basically, by using electronic money, people can avoid losing money because the money has been recorded on the card or cell phone account balance. However, many people still think that electronic money has significant risks and has many weaknesses, so they prefer to make payments with real cash.

In Yogyakarta, the trend of using electronic money remains low because the habit of using cash is still entrenched, so payment using electronic money has not been seen as a necessity. In addition, the number of sellers or merchants who accepts electronic money payment is relatively small. According to the Representative Office Head of Bank Indonesia in Yogyakarta, collecting direct data of the number of transactions using electronic money has not been carried out. However, Bank Indonesia is trying to encourage the use of electronic money in Yogyakarta for various transaction services as the use of electronic money is considered highly appropriate for retail transactions in Yogyakarta.

According to Financial Authority Services (OJK) (2019), financial literacy is knowledge, skill, and beliefs, which influence one's attitudes and behavior to improve the quality of decision making and financial management for community welfare. It implies a certain level of financial knowledge and the ability to apply the knowledge in action (Xiao & O'Neill, 2016). Romitiy and Rossiz (2014) argued that higher financial literacy helps individuals monitor an optimal consumption and balanced portfolio. It can be characterized as:

The cycle by which monetary purchasers/financial backers improve their comprehension of monetary items and ideas and, through data, guidance and additionally target exhortation, build up the abilities and certainty to turn out to be more mindful of monetary dangers and opportunities, to settle on educated decisions, to realize where to go for help, and to make other successful moves to improve their monetary prosperity. (Becchetti, Caiazza, & Coviello, 2013). Financial literacy can affect a person's lifestyle not to be wasteful and avoid consumptive behaviour (Astuti, Tanjung, & Putri, 2019). If the knowledge and understanding of financial institutions, products, and services are low, the utilization of financial institutions, products, and services will be low.

Financial Services Authority (OJK) shows that the financial literacy and inclusion index in Yogyakarta is low and below the national average. The national data show that 27% of the people in Yogyakarta understand financial literacy from the target of 75%. This is because the recognition and access of the people to financial products from formal institutions remain low since there are many micro, small, and medium enterprises (MSMEs) in traditional markets that have not been reached.

Several studies on the effect of financial literacy on interest using electronic money have been conducted (e.g., Servon & Kaetner (2008); Swiecka (2018) and Morgan and Trinh (2020)). Servon and Kaetner proved a potential link between information and communications technologies and financial literacy. Overall, urban low- and moderate-income individuals are interested in becoming technologically and financially literate, and an intensive intervention may enable these goals. Swiecka underlined the importance of financial literacy in the development of cashless transactions. Most consumers have elementary financial skills, like using an ATM and a payment card. The percentage of consumers who can buy and pay for online shopping is much smaller, and almost 40% of the respondents admitted that they could pay by phone for shopping. Morgan and Trinh found a positive correlation between financial literacy and the use of some fintech products (e-banking, e-payment). They suggested that the increase in financial literacy will increase the use of e-banking services by 4.1% and the use of e-payment by 3.9%.

In addition, several researchers have investigated factors that influence the use of non-cash payment instruments. Goczek and Witkowski (2015) stated that social, demographic, and economic factors significantly affect the number of non-cash payment transactions. Cheong and Park (2005) argued that usability and ease of use positively correlate with an attitude towards mobile internet. Financial capability, ease of use, and consumer behavior positively affect intention to use electronic money. Sigar (2016) strengthened this research revealing a significant positive effect of perceived usefulness, ease of use, and enjoyment on the intention to use electronic money.

By this phenomenon, we analyzed the variables that impact the use of electronic money by additionally analyzing financial literacy, financial capability, perceived ease of use and benefits. These variables are utilized because an individual's comprehension of the utilization of electronic money is not only founded on requirements and advantages but also dependent on information and capacities. This research is expected to contribute to understanding the importance of financial literacy as it is a reflection of one's knowledge, attitudes, and financial behavior. It indicates that people with good financial knowledge, attitudes, and behavior will encourage someone to take advantage of financial products and services.

LITERATURE REVIEW

E-money is a form of electronic communication that consumers can use as a payment instrument (Al-Laham, Al-Tarawneh, & Abdallat, 2009). According to the explanation of Bank Indonesia (2019), e-money has more advantages, such as the ability to store and

record on cards or instruments, owner authority, and offline transactions. In Indonesia, electronic money is regulated by Bank Indonesia Regulation No. 11/12 / PBI / 2009 concerning electronic money. In simple terms, electronic money is defined as a payment in electronic form where the value of the money is stored in certain electronic media. The user must first deposit the money and keep it in electronic media before using it for transactional purposes. When used, the value of electronic money will be decreased by the value of the transaction. Electronic media to store electronic money values can be in the form of chips or servers. The use of e-money as an innovative and practical means of payment is expected to help smooth payments for mass, fast, and micro-economic activities in transportation such as trains or other public transportation or transactions in minimarkets food courts, or parking.

The Impact of Financial Literacy on the Intention to Use Electronic Money

Financial literacy is knowledge of how to manage and analyze financial conditions. Garman and Fogue (2010) stated that financial literacy represents knowledge of facts, concepts, principles, and tools of the underlying technology for intelligent use of money. One with sound financial literacy will have a good level of knowledge and skills in decision making. They will also have not only a good level of understanding about financial institutions but also existing financial products and services, including the use of electronic money. Awalina (2019) suggested that financial literacy has a positive influence on interest in using electronic money. According to Awalina, the better one's level of financial literacy, the more likely they are to make savings and tend to use electronic money of their savings balance; thus, the intention to use electronic money will be even higher. Astiti, Warmana, and Hidayah (2019) divided financial literacy into three dimensions: financial knowledge, financial behavior, and financial attitude. They found that only financial knowledge affects investment decision-making. On this basis, we hypothesize:

H1: Financial literacy has a positive impact on the intention to use electronic money.

The Impact of Financial Capability on the Intention to Use Electronic Money

Financial capability is one's capacity to take care of issues and deal with funds, both from compensation and pocket money, which will impact choices in picking and buying an item. Zakaria and Sabir (2013) stated that financial capability is an individual's capacity to deal with their accounts each day. It implies a certain level of financial knowledge and the performance of desirable financial behaviors for achieving financial well-being. It is a broad concept that includes one's knowledge and skills to understand financial conditions and the motivation to take action. Financially capable consumers will have a plan, seek and use information, know when to need, understand and follow up advice, and have extensive participation in financial market services.

Financial capability positively affects the intention to use electronic money. It can be assumed that if a person has sufficient financial ability, it will be easier to fill out electronic money so that access to electronic money is not hampered. On this basis, the suggested hypothesis is:

Hypothesis 2: Financial capability has a positive effect on intention to use electronic money.

The Impact of Perceived benefits on Intention to Use Electronic Money

Perceived benefits indicates a person's belief in using new technology to improve its performance (Davis, 1989). According to Kirana and Yasa (2013), perceived benefits are a combination of physical attributes, services attributes, and technical support attributes of products or services. It is the level at which the user believes that they will feel the benefits by using particular products. Lee (2008) proposed two main types of perceived benefits; direct and indirect benefits. Direct benefits refer to the tangible benefits that customers will enjoy using online services, while indirect benefits are less tangible and difficult to measure.

Dewi and Aksari (2019) proved a significant positive effect of perceived benefits on intention to use. It indicates that the higher the perceived benefits, the higher one's intentions to use a credit card. Credit cards are a helpful provision of reserve funds to ease the financial burden in emergencies. Lee also pointed out that perceived benefits significantly influence the intention to use online banking. His research implies that the perceived benefit is the most important positive predictor in shaping the intention to use online services. On this basis, we formulate:

H3: Perceived benefits have a positive impact on the intention to use electronic money.

The Impact of Perceived Ease of Use on Intention to Use Electronic Money

E-money provides various conveniences in making payment transactions. This is evident from the scanning or barcodes in making payments. In addition, payments with e-money are of good quality because the process is fast and straightforward. It also provides time efficiency, where one does not need to provide cash, spend time going to an ATM, or provide banknotes to make a payment. However, the process of electronic money requires good network or system support (Tuilan, Pangemanan, & Tielung, 2018). The effect of perceived ease of use can be explained as a belief that a technological system is straightforward to use (Davis, 1989).

Research by Teoh, Chong, Lin, and Chua (2013), Tuilan et al. (2018), and Mentari, Setiawina, Budi, and Sudirman (2019) proved that perceived convenience has a positive effect on the use of electronic money. Consumers believe that electronic money provides convenience in making payments, thereby encouraging attitudes to use electronic money. On this basis, we suggest:

Hypothesis 4: Perceived ease of use has a positive impact on intention to use electronic money.

Consumer Behavior

Consumer behavior is a natural action of an individual or group influenced by external and internal aspects that directs them to choose and consume goods or the desired service. This behavior is an act that is directly involved in acquiring, consuming, and spending products and services. According to Chaurasiya, Pandey, Verma, and Kek (2020), consumer behavior shows how consumers select, buy, and use ideas, goods, and services to satisfy their needs and wants. Consumer behaviors are the activities of individuals who are directly involved in services, including the decision-making process.

Pamungkas (2018) proved that consumer behavior has significant effects on the intention to use e-money. It shows that consumer behavior increases the intention to use e-money. From the indicators of consumer behavior, it can be explained that social factors, lifestyle, and social status influence one's intention to use a good or service.

Hypothesis 5: consumer behavior mediates the effect of financial literacy on the intention to electronic money.

Hypothesis 6: consumer behavior can mediate the effect of financial capability on the intention to use electronic money.

Hypothesis 7: consumer behavior can mediate the effect of perceived benefits on the intention to use electronic money.

Hypothesis 8: consumer behavior can mediate the effect of perceived ease of use on intention to use electronic money.

RESEARCH METHOD

This study is causal and quantitative. Quantitative research or quantitative method is based on the positivism paradigm to investigate specific populations or samples (Sugiyono, 2013). The population in this study was people living in Yogyakarta. The sampling was carried out by convenience sampling. As for the data collection, a

questionnaire was distributed to 103 respondents who use electronic money. The sample size refers to Roscoe (1975), who stated that the appropriate sample size is between 30 and 500.

Data Analysis Method

The reliability test was established by testing for consistency and stability of the respondent's answer. Consistency indicates how well the items measuring a concept hang together as a set. Alpha Cronbach is a reliable coefficient that can indicate how good items in assets positively correlate with one another (Sekaran & Bougie, 2017). From the reliability test of financial literacy (4 items), financial capability (2 items), perceived benefits (6 items), perceived ease of use (4 items), consumer behavior (7 items), and interest in use (4 items), the result shows that all items have a Cronbach Alpha value > 0,06. This means that all items are reliable to measure the object of research.

Since reliable scales are not necessarily valid, we need to be concerned about validity. It assesses whether a scale measures what is supposed to be measured. Thus validity is a measure of accuracy. Pearson Product Moment is used to analyze the validity of the questionnaire. An instrument measure is valid if it measures what ought to be measured. The validity test is the degree to which a test procedure accurately measures what it was designed to measure. Validity is the strength of conclusion and inference proportion. The result of the validity test shows that all items have a significance value of less than 0.005. This means that all items are valid and can be used to measure the object of research. The results of the reliability and validity test are presented in Table 1.

Table 1. Reliability and Validity Test

Variable	Validity Test		Reliability Test
	Item	Correlation Sign	Cronbach Alpha
Financial Literacy (X1)	X1.1	0,005	0,632
	X1.2	0,000	
	X1.3	0,009	
	X1.4	0,000	
Financial Capability (X2)	X2.1	0,000	0,861
	X2.2	0,000	
Perceived Benefit(X3)	X3.1	0,000	0,863
	X3.2	0,000	
	X3.3	0,000	
	X3.4	0,000	
	X3.5	0,001	
	X3.6	0,000	
Perceived ease of use (X4)	X4.1	0,000	0,893
	X4.2	0,000	
	X4.3	0,000	
	X4.4	0,000	
Consumer Behaviour (Z)	Z1	0,000	0,871
	Z2	0,000	
	Z3	0,000	
	Z4	0,000	
	Z5	0,000	
	Z6	0,000	
	Z7	0,000	
Intention to Use (Y)	Y1	0,000	0,904
	Y2	0,000	
	Y3	0,000	

	Y4	0,000	
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Research Variables

The dependent variable in this study is the interest in using electronic money (e-money). Interest is the condition of someone interested in something accompanied by the desire to find out more. In this study, interest in using electronic money was assessed by four things, namely perception, trust, social and experimental environment.

The independent variables consist of four variables: financial literacy, financial capability, perceived ease of use, and perceived benefits. Four indicators are used to explain the financial literacy variable. They are knowledge of financial concepts, ability to manage finances, credit/debt management, and savings and investment (Awalina, 2019). The indicators used to explain the variable of financial capability are financial capacity and a sense of trust in their abilities. The indicators used to measure the perceived benefit variable are the fast settlement of payment transactions, time-saving, more efficient payments, payment simplicity, safe transactions, and accuracy. Meanwhile, perceived ease of use is measured by exploring the level of ease, experience, affective, and media presence.

This study also uses a mediating variable, namely consumer behavior. The measurement of consumer behavior is carried out using indicators of perceptions, attitudes and social norms of electronic money users.

Empirical Models

Path analysis will be used to test the financial literacy, financial capability, perceived benefits, and perceived ease of use on intention to use electronic money. Path analysis is a technique for analyzing causal relationships in regression if exogenous variables directly or indirectly affect endogenous variables. It uses path diagrams to present problems in images and determine structural equations that state the relationships between variables on the path diagram. Path diagrams can be used to calculate the direct and indirect effects of an independent variable on a dependent variable. These effects are reflected in the path coefficients, where the path analysis mathematically follows a structural model. In this study, the structural model used is as follows:

$$Y = \alpha_1 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_1 \quad (1)$$

$$Z = \alpha_2 + P_5 X_1 + P_6 X_2 + P_7 X_3 + P_8 X_4 + e_2 \quad (2)$$

$$Y = \alpha_3 + P_1 X_1 + P_2 X_2 + P_3 X_3 + P_4 X_4 + P_9 Z + e_2 \quad (3)$$

To determine the influence of the mediating variable, the Sobel test was used with the following formula:

$$T = \frac{ab}{\sqrt{b^2 Sa^2 + a^2 Sb^2 + Sa^2 Sb^2}} \quad (4)$$

Where:

a = Coefficient of Independent Variable

b = Coefficient of Mediating Variable

Sa = Standard Error Coefficient a

Sb = Standard Error Coefficient b

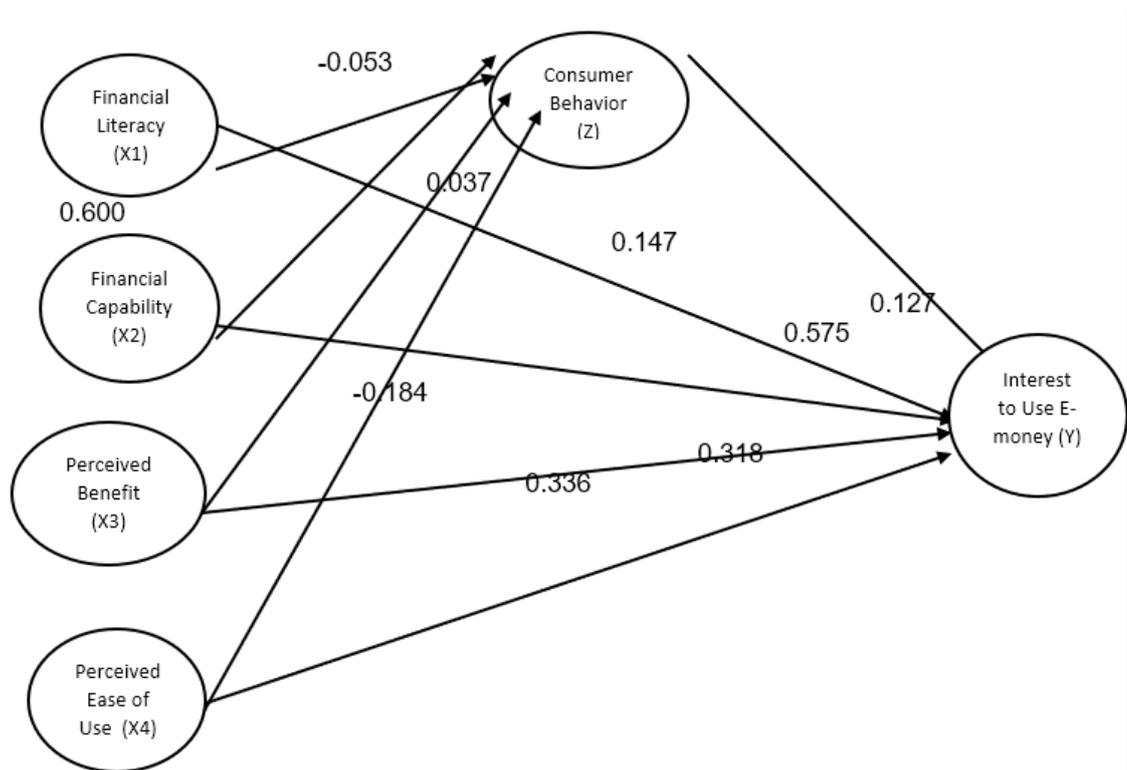
If $t_{count} > t_{table}$, the influence of mediation occurs. The t_{table} value in this study is 1.6607.

Test Results

Path analysis was carried out to determine the direct impact of the financial literacy, financial capability, perceived ease of use, and perceived benefits on intention to use electronic money, and the indirect effect of the dependent variable on the intention to use

electronic money through consumer behavior as a mediating variable. The results of the direct and indirect effect testing are presented in Figure 1.

Figure 1. Relationship Path Financial Literacy, Financial capability, Perceived Ease of Use, and Perceived benefits in Intention to Use Electronic Money with Consumer Behavior as a Variable Mediation



The results of the path analysis from testing the hypothesis model between variables are presented in Table 2.

Table 2. Test Results of Path Analysis

Variables	Model 1		Model 2		Influence of Total
	Direct Influence	Sign	Indirect Influence	Sobel Test	
Constant	-	.375		.577	
Financial Literacy	.022	.147**	-.0318	1,994 *	.1152
Financial Capability	.037	.127**	.0222	1.9659*	.02819
Perceived Benefits	-.184	.073	.345	-1.6612.	0.161
Perceived Ease of Use	.318	.001 *	.2016	2.9805 *	0.5196
Consumer Behavior	.600	.000 *			

Note: * significant at $\alpha = 5\%$

** significant at $\alpha = 10\%$

The test results of model 2 indicate that financial literacy, financial capability, and perceived ease of use directly have a significant positive impact on intention to use electronic money. Meanwhile, perceived benefits have a not significant effect on interest in using electronic money. In model 2, the results show that consumer behavior can mediate the influence of financial literacy, financial capability, and perceived ease of use of electronic money. However, consumer behavior does not mediate the effect of perceived

benefits. It also can be explained that the effect of financial literacy, financial capacity, and perceived benefits intention to use electronic money has a direct effect more significant than the indirect effect.

RESULTS

The study results prove that financial literacy positively affects the intention to use electronic money, which is mediated by consumer behavior. The higher a person's literacy, the better behavior of making decisions about using electronic money. This behavior is shown by considering subjective norms, utilizing experience, and having reasonable control over financial plans (Kidwell & Turrisi, 2004).

Financial capability positively influences the intention to use electronic money, which is mediated by consumer behavior. Those with good financial capability will have the ability to manage hid daily finance. An increase in income will be accompanied by an increase in consumption and savings. The increasing level of consumption affects one's behavior to find the most effective and safe way to make buying and selling transactions. The use of electronic money can be a practical and comfortable choice in buying and selling transactions. This is in line with Xu, Frey, and Ilic (2016), contending the influence of financial capability on the behavior of using electronic money.

Perceived benefits have no influence on intention to use electronic money. It means that the respondents believe that the use of electronic money does not provide more benefits for its users. This can be due to users' lack of trust regarding its effectiveness, efficiency, and productivity, where these benefits are deemed insufficient to meet user need and incapable of contributing more user performance. However, consumer behavior cannot mediate the effect of perceived benefits on the indirect use of electronic money. This shows that consumer behavior is not a strong link between perceived benefits and intention to use electronic money.

DISCUSSION

The use of a system that is beneficial to someone will encourage someone to use the system. The use of electronic money implies that the payment system is functional and can be used as an alternative payment option. It can be explained that consumer behavior is not able to mediate the effect of perceived benefits on intention to use electronic money, possibly because even though respondents already understand the benefits of using electronic money in terms of productivity, effectiveness, and ease of performance, there are many alternative non-cash payment options, such as debit and credit cards making respondents prefer to the non-cash payments. Consumers feel that a debit or credit card makes them feel that the cards provide better benefits or as exact as using electronic money. Thus, the respondents consider that the use of electronic money does not contribute more to user performance.

Perceived ease of use has an influence on intention to use electronic money that is mediated by consumer behavior. It shows the degree to which a person believes that technology will be easy to use. This perception will have an impact on a person's behavior, where the higher one's perception of the ease of using a technology system, the higher the utilization of this technology in one's life. Consumers who feel comfortable and happy with the easy use of e-money will tend to have a high intention to use it. E-money users who use it when making transactions will perceive electronic money as a toll road like a mini market that allows sellers to process transactions very efficiently and encourage intention to use e-money (Mentari et al., 2019).

This research shows the influence of financial literacy, financial capacity, and perceived ease of use of electronic money with financial behavior as a mediating variable. These results indicate that in making decisions related to the use of electronic money, a person with a high level of literacy will have positive behavior which is shown from consideration of subjective norms, utilizing experience and having good control over financial decision-making plans.

CONCLUSION

Our analysis concludes that the high financial capacity of a person will be able to be controlled with positive behavior to find the most effective and safe way to make buying and selling transactions. Thus, the use of electronic money can be an effective and comfortable choice in buying and selling transactions. In terms of perceived ease of use, this perception will have an impact on one's behavior, where the higher one's perception of the ease of using a technological system, the higher the utilization of this technology in one's life. Someone who feels comfortable and happy with easy use of electronic money will tend to have a high intention to use electronic money.

This research also shows that consumer behavior indirectly does not mediate the effect of perceived benefits on intention to use electronic money. This is possible because someone thinks that electronic money does not contribute more to user performance than the benefits of other electronic payment alternatives that are better or the same as the use of e-money.

This study has limitations. It did not include other important aspects of consumer behavior, such as prior experience using electronic money, social impact, risk, and enjoyment factors. Further research needs to address these constructs and should also consider a larger sample size to increase reliability. The results of this study have the following implications. First, the research findings indicate how financial literacy levels affect the interest in using electronic money, whether they are ready to adopt a changed lifestyle. Second, necessary strategies for businesses support the use of electronic money as an alternative to non-cash payment that can reach people with no access to the banking system. Third, this study serves as a basis for further research on using electronic money by providing further applications by adopting advanced technologies for increased attitudes, behaviors, and satisfaction.

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