

Electronic Money Determinations in Aceh Besar District

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Abstract

The objective of this study is to examine socioeconomic factors that determine the choice of electronic money in Aceh Besar District. This study uses cross-sectional data of households as respondents with a total of 250 respondents. The cross-tabulation method is utilized to examine the socioeconomic factors that determine the choice of electronic money in Aceh Besar District. The choice is analyzed between males and females to explore the different effects of gender. The results show that males prefer electronic money compared to females in bank account ownership, ATM card, side job, educational level, poverty level, and family size. Only permanent working status, female prefer electronic money while the male does not. It is necessary to increase the dissemination of electronic money to women because the female population is more than males. Business actors are also more female than male, small and medium enterprises.

Keywords: Electronic Money, Socioeconomic Factor, Gender, Aceh Besar.

Introduction

Economic progress cannot be separated from the composition of the money supply in the country's economy. An economy that is not yet entirely based on market forces is reflected in the role of narrow money supply (M1), which is more dominant than broad money supply (M2). A healthier economy can be seen from the composition of M2, which is getting bigger in line with the country's economic development. On the other hand, if M1 is more dominant than M2, then the country has not experienced economic progress compared to a country that has M2 greater than M1.

Figure 1 shows that the Indonesian economy has developed very well when viewed from the composition of M2, which is more significant than M1. At the beginning of 2017, the composition of M2 was more extensive than that of M1. This condition continues to increase until August 2021, the contribution of M2 is much more significant than M1. Figure 1 does illustrate that M2 has decreased compared to M1, but M2 is still very dominant compared to M1.

Although the composition of M2 has decreased compared to early 2017, the dominance of M2 is still considerable compared to M1. This condition is a confirmation that the Indonesian economy has improved.

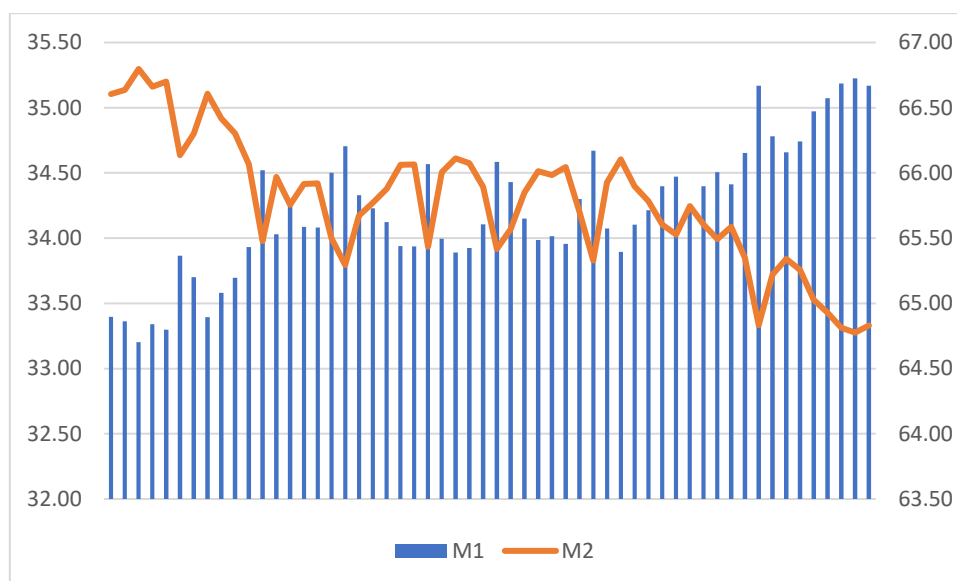


Figure 1: Comparison between M1 and M2 in Indonesia, 2017.01–2021.08 (%).

Source: Bank Indonesia (2021).

The increase in electronic money is inseparable from economic development or economic growth. The higher the income level, the greater the availability of money, and the demand for money will increase. One of the money that has increased is, of course, electronic money because many people make daily transactions that are supported by electronic money. Figure 2 confirms the relationship between economic growth and the increase in electronic money in Indonesia from 2009 to 2020.

Figure 2 illustrates that the development pattern of economic growth is almost the same as the development pattern of electronic money. In the early stages, there was a decline in the growth of electronic money in 2009, and at the same time, economic growth also decreased. A similar pattern is shown in the period from 2014 to 2016, where low economic growth was followed by low growth in electronic money. After that, there was an increase in the growth of electronic money in line with the increase in economic growth.

This increase in the growth of electronic money follows the theory of money demand, influenced by income and interest rates. Income has a positive effect on the demand for money, and the interest rate has a negative effect on the demand for money. This analysis of the demand for electronic money is to find out how the influence of various variables on demand for electronic money is. Fujiki & Tanaka (2014) examine various variables' effects on Japan's conditional demand for electronic money. They use the analysis model's variables are cash balance, disposable income, financial assets, age, gender, and many other variables. The estimation results show that many people use electronic money when cash is lower. These results illustrate the increasing use of electronic money in Japan. The results of this study are under the theory of money demand in general.

The study shows a shift in the use of money from cash balances to electronic money. The results of this study are supported by a study conducted by Wonglimpiyarat (2016) which found that there was a shift in the use of cash balances towards electronic money. This shift in the use of electronic money forms an S-curve pattern. This result is a perfect empirical basis that there has been a shift in the use of money from cache balances to electronic money.

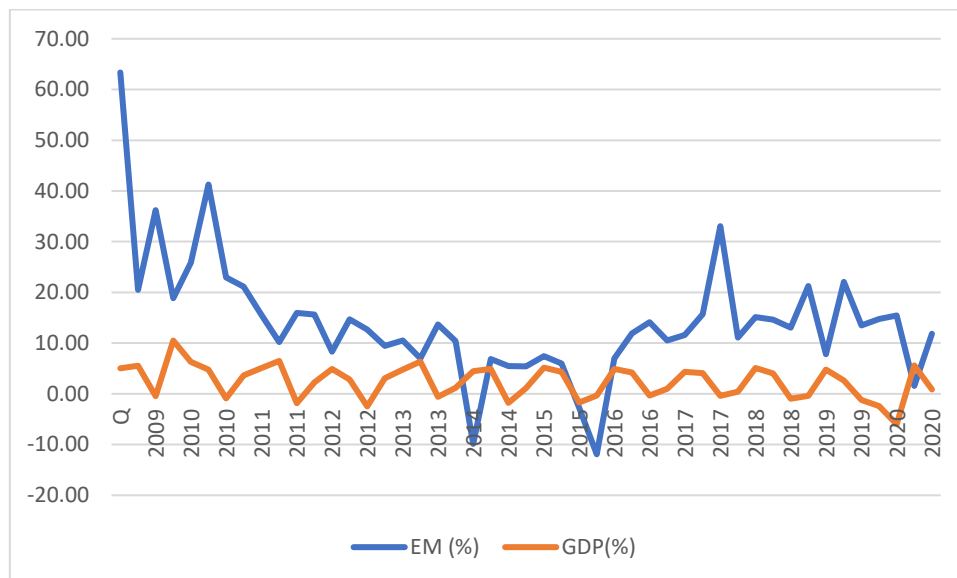


Figure 2: Economic Growth and Electronic Money Growth in Indonesia, 2009 – 2020 (percent).

Source: Bank Indonesia (2021).

There have been several studies conducted on-demand for electronic money in several countries. However, there has been no analysis of the influence of socioeconomic variables on demand for electronic money. This study discusses the influence of socioeconomic variables on electronic money in Aceh Besar District. This study is significant because the location of Aceh Besar District, which borders the capital city of Aceh Province, will undoubtedly affect the community's economic activities, including the use of electronic money. This study will provide a new reference for the development of electronic money in suburban areas, which usually experience a somewhat slower development than urban areas.

Literature Review

The demand for money is one of the topics that has been analyzed in economics for a very long time. Handa (2009) states that several factors influence the demand for money according to the purpose of the money demand. First, people need money to meet their daily transaction needs. Second, the demand for money is allocated to meet precautionary needs. The income level determines these transaction objectives; greater the income then greater the demand for money for transaction purposes, and just in case. Third, the demand for money for speculative purposes in the hope of profiting from this goal. The interest rate determines the demand for money for this speculation. Overall, two essential variables determine the demand for money, namely income and interest rates. However, there is one more variable that affects the demand for money, namely inflation. High inflation results in a decrease in the value of real money so that more money is needed to maintain transactions.

The demand for electronic money is the same as the demand for conventional money because the income and price variables significantly affect the demand for electronic money. However, the interest rate is not very influential because there is no big reward from this electronic money in an interest rate. Research on the demand for electronic money in Indonesia has been carried out, among others, by Ardyatama (2020) and Sumolang (2020) by including the ECD machine variable in the research analysis. More detailed research on electronic money demand using microdata was conducted by Fujiki & Tanaka (2014) in Japan. The study results show that the use of electronic money at a certain level has a size that is not too large. For example, transactions under 1000 are more significant than transactions between 1000 and 5000. This result confirms that most households in Japan use electronic money for smaller transactions with a contribution of 21.08 percent compared to large transactions with 11.36 percent. Overall, the total transactions with electronic money in the study amounted to 25.52 percent.

This increase in demand for electronic money can encourage economic development if more sectors use electronic money, especially small and medium enterprises (SMEs), as happened in Kenya. Beck, Pamuk, Ramrattan, & Uras (2018) found that the use of electronic money boosted the productivity of SMEs because trust in electronic money was increasing in Kenya. Similar results were also found by Malaquias & Silva (2020), who researched the use of electronic money in Brazil because farmers have also started receiving electronic money. The increasingly widespread existence of electronic money can positively increase transactions and, of course, economic development.

The increase in electronic money receipts also occurred in the Malaysian hospitality sector. Lew, Tan, Loh, Hew, & Ooi (2020) found that electronic money receipts have reached 60 percent. The results of this study are in line with a study conducted by Malaquias & Silva (2020) in Brazil. This development is very encouraging that public and SMEs' trust in electronic money has increased enormously in developed countries and developing countries.

Indeed, many studies have been conducted on the demand for electronic money and its acceptance in several countries. However, studies on the socioeconomic influence on the demand for electronic money in suburban areas have not been widely carried out using household data. There is no analysis using the chi-squares analysis model, especially in the Aceh Besar District. Based on these considerations, this study analyzes the influence of socioeconomic variables on demand for electronic money in Aceh Besar District. This research is expected to fill the related study gaps and become input for decision-makers in the field of financial and banking services.

Research Method

This research was conducted in Aceh Besar District, which was selected by purposive random sampling method. The selection of Aceh Besar District considers that as a suburban area, of course, many economic activities take place using electronic money. Development in Aceh Besar District cannot be separated from the role of this area as part of the economic life of the capital city of Aceh Province.

After the Aceh Besar District is selected, then the sample household is selected. Given the Covid-19 pandemic, the number of households in this study was 250 samples. Samples were selected using simple random sampling because the sample households were 25 years of age and over. The determination of the respondents' age is expected to provide a better picture of the influence of these socioeconomic variables on electronic money in Aceh Besar District. The age of 25 years is considered the age that can provide more independent decisions in using electronic money to support daily transactions.

After the samples are selected, the existing data are analyzed using the chi-squares model to provide more precise results because it can provide significant or insignificant differences in influence. The model analysis was carried out with (Anderson, Sweeney, & Williams, 2011):

$$\chi^2 = \sum_{i=1}^k \frac{(f_i - e_i)^2}{e_i} \quad (1)$$

The components in equation (1) can consist of f_i being the actual frequencies, and e_i expected frequencies. By using the p-value approach, it will be determined whether one variable affects other variables. If the p-value is 0.05, the null hypothesis is rejected, which means that one variable affects other variables.

Research Findings and Discussion

Socioeconomic factors are significant factors in consumers' choices, both for the goods purchased and the media used to conduct transactions. One of the essential tools in conducting transactions today is electronic money. The use of electronic money has increased along with the advancement of payment instruments. This electronic payment instrument, known as electronic money, is provided mainly by banks, but non-bank financial institutions provide some. This electronic issuance must obtain permission from Bank Indonesia and the Financial Services Authority (OJK) as the official institution that regulates this electronic money.

An analysis of the socioeconomic factors that determine the choice to use electronic money is fundamental because this analysis is still minimal. For the Aceh Besar District, there is still no available. Several variables are used in this analysis, namely bank account, having ATM card, side job, educational level, poverty level, family size, and working status. For a more in-depth analysis, gender segregation was carried out between males and females.

Table 1 shows the effect of bank account ownership on the selection of electronic money. The estimation results have two different results between males and females. Females do not choose electronic money even though they have a bank account, while males significantly influence the choice of electronic money. This estimation result is one of the essential factors for men who have a bank account and, at the same time, choose electronic money. The combination of male and female also affects the selection of electronic money. This result is an essential indicator that households with bank accounts will choose electronic money. This result is an indication that males prefer electronic money compared to females.

Table 1: The Effect of Bank Account on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	0.78	1	0.43	0.33
Male	5.16	1	0.04	0.04
Total	5.83	1	0.02	0.02

Source: *Estimated Results, 2021.*

The choice of a bank account today will give an option to the ownership of an ATM card because, in general, banks will offer this ATM card as a form of service provided by banks. The ownership of this ATM card can indirectly become electronic money so that households that do not choose electronic money will rely on this ATM card to support their daily transactions. Gender has no effect on the selection of electronic money for both males and females, but it is very influential as a whole. This estimation result is an indicator that overall, households still choose electronic money to support daily transactions. Table 2 gives the result that only the overall effect on the selection of electronic money. The chi-square statistic value for the total is very significant, and the results differ according to gender.

Table 2: The Effect of Having ATM Card on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	1.49	1	0.26	0.21
Male	1.94	1	0.22	0.16
Total	4.29	1	0.05	0.04

Source: *Estimated Results, 2021.*

Another economic variable that is considered to affect the selection of electronic money is the side job. Households that have a side job will get a higher income than households that do not have a side job. This situation will determine the selection of electronic money. Table 3 shows that only males who have side jobs choose electronic money compared to females. The estimation results are not surprising because males usually do side jobs compared to females. These results indicate that overall, both males and females who have side jobs will choose electronic money. Households who have side jobs will use the time to carry outside jobs; electronic money is needed to support side job activities carried out by households.

Table 3: The Effect of Side Job on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	0.02	1	1.00	0.54
Male	21.16	1	0.00	0.00
Total	17.09	1	0.00	0.00

Source: *Estimated Results, 2021.*

The education variable is an essential variable in economic research because education significantly influences daily household activities. Table 4 shows the different results between males and females in choosing electronic money. The estimation result of the female is not statistically significant compared to males. These results indicate that males prefer electronic money compared to females. The overall results show that households with higher education will choose electronic money compared to households with relatively lower education.

Table 4: The Effect of Educational Level on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	1.15	1	0.32	0.21
Male	19.70	1	0.00	0.00
Total	16.36	1	0.00	0.00

Source: *Estimated Results, 2021.*

Welfare is a measure commonly used in economic analysis and its effect on various other variables. Based on these considerations, poverty status is one of the essential factors in selecting electronic money. Table 5 shows the estimation results between males and females in choosing electronic money based on poverty status. More prosperous males will choose electronic money, while females do not choose electronic money even though they are already prosperous. In total, prosperous households will choose electronic money compared to less prosperous households. The estimation results show that males have a higher tendency to choose electronic money than females. There is a possibility that men prefer simpler payments using electronic money, so they choose electronic money.

Table 5: The Effect of Poverty Level on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	0.11	1	1.00	0.50
Male	5.72	1	0.03	0.02
Total	4.38	1	0.04	0.03

Source: *Estimated Results, 2021.*

The results of the estimation of the effect of family size on the selection of electronic money are shown in Table 6. This family size follows the national family welfare program, namely families with a family size of four people and families with more than four people. In theory, a family with four people tends to be more prosperous because the per capita income is higher than households with large family sizes. Table 6 shows that males who have a family of four choose electronic money compared to females. However, in total, households with a family size of four people prefer electronic money. This result is very rational because more prosperous households will take advantage of the convenience offered by electronic money.

Table 6: The Effect of Family Size on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	1.04	1	0.49	0.49
Male	4.90	1	0.04	0.04
Total	4.76	1	0.05	0.04

Source: *Estimated Results, 2021.*

Working status is one of the essential variables in the economy because workers who have permanent jobs will affect the selection of electronic money. Only women who have permanent working status choose electronic money compared to men. It also shows that households with permanent working status do not choose electronic money, especially those that do not have permanent working status. This result is very different from various other socioeconomic variables that have been discussed in the previous section.

Table 7: The Effect of Working Status on Electronic Money

Gender	Chi-square	df	2-sided	1-sided
Female	3.71	1	0.07	0.05
Male	0.19	1	0.74	0.39
Total	0.31	1	0.60	0.34

Source: *Estimated Results, 2021.*

Conclusion

The analysis results show that bank account ownership only affects males and not females in the selection of electronic money. Overall, bank account ownership affects the selection of electronic money. Second, ownership of an ATM card affects males and does not affect females, but overall, it affects the selection of electronic money. Third, men who have side jobs will choose electronic money and not women. Fourth, males who have higher education will choose electronic money while females do not. Fifth, men who are not poor will choose electronic money while women will not choose electronic money even though women are not poor. Sixth, males who have a prosperous family size prefer electronic money compared to females. Lastly, women who have permanent working status prefer electronic money compared to men.

This study shows that women still do not choose electronic money compared to women, except for permanent working status. Policymakers should encourage the use of electronic money for women because most of the residents of Aceh Besar District are female, and many SMEs are also female. With the increase in the selection of electronic money for women, the greater the use of electronic money in Aceh Besar District.

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