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Facultad Experimental de Ciencias
Departamento de Ciencias Humanas
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Use of Banking in Online Transactions: A Case Study of Aceh Province

Aliasuddin[1*]
[1]Department of Economics, Faculty of Economics and Business, Syiah Kuala University Darussalam Banda Aceh 23111 Indonesia
aliasuddin@unsyiah.ac.id

Weri[2]
[2]Department of Economics, Faculty of Economics and Business, Syiah Kuala University Darussalam Banda Aceh 23111 Indonesia
weri@unsyiah.ac.id

Nanda Rahmi[3]
[3]Department of Economics, Faculty of Economics and Business, Syiah Kuala University Darussalam Banda Aceh 23111 Indonesia
nandarahmi@unsyiah.ac.id

Abstract

The objective of this study is to analyze the use of banking in online transactions in Aceh Province. Three regencies were purposively selected in this study, Banda Aceh, Aceh Barat, and Lhokseumawe. The regencies were selected because they can be reached via a direct flight from Medan, a major city in Indonesia. 400 respondents were randomly selected from these districts. There were 161 respondents from Banda Aceh, 113 from Lhokseumawe, and 126 from Aceh Barat. The results show that income and education were statistically and positively significant factors in determining banking usage, while other variables were not statistically significant.

Keywords: online transaction, digital economy, use of banking, Aceh, Indonesia.

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Uso de la banca en las transacciones en línea: un estudio de caso de la provincia de Aceh

Resumen

El objetivo de este estudio es analizar el uso de la banca en las transacciones en línea en la provincia de Aceh. Se seleccionaron deliberadamente tres regencias en este estudio, Banda Aceh, Aceh Barat y Lhokseumawe. Las regencias fueron seleccionadas porque se puede llegar a ellas mediante un vuelo directo desde Medan, una ciudad importante en Indonesia. 400 encuestados fueron seleccionados al azar de estos distritos. Hubo 161 encuestados de Banda Aceh, 113 de Lhokseumawe y 126 de Aceh Barat. Los resultados muestran que el ingreso y la educación fueron factores estadísticamente y positivamente significativos para determinar el uso bancario, mientras que otras variables no fueron estadísticamente significativas.

Palabras clave: transacción en línea, economía digital, uso de la banca, Aceh, Indonesia.

1. INTRODUCTION

Recently, online transactions have become very important in the digital economy. To support online transactions in the digital economy, a fast medium of payment is needed. Fast payments are possible if households in Aceh use a banking payment system. This means the use of banking is an interesting topic in Aceh because Aceh implements a Sharia system, as stated in Act 11/2006, which concerns Aceh's Government.

In modern systems, banking plays a significant role in supporting both the economy as a whole and the digital economy. Transaction processes are easier and faster in modern banking payment systems. If a society uses banking in its transactions, this means that society has adopted the use of banking to a greater degree. In developed countries, even synthetic money is used in the economy as a medium of payment. Selgin (2015) states that synthetic money use is significant in the modern world economy, including the digital economy. This modern payment system has the important role of promoting online transactions. Online transactions are very important to the economy of Indonesia. Online transactions contributed a total of USD 0.56 billion to the economy in 2011, a sum which increased by 6.39 per cent to a total of USD 1.04 billion in 2012. Bayero (2015) revealed that awareness, user value, infrastructure are important factors in financial inclusion.

The work of Malaquias et al., (2018) show that information and communication technology has a significant effect on digitalization of business processes including banking transactions. The banking transaction in the digital era such as Automated Teller Machines, Internet (Web) Transactions, Mobile Payments, Instant Payments, Electronic Fund Transfer, Point of Sales (POS), and Automated Cheque Clearing and e-Bills Pay.

Malaquias et al., (2018) analyzes banking use in Poland nonparametric statistics and linear regression model shows that

position of other bank accounts, trust in commercial banks, age, education, use of internet exert, and income have an effect on online banking in Poland. Meanwhile, the study of George (2018) that uses structural equation model in Krala shows that perceive ease of use and perceive usefulness have a significant role in determining internet banking. Furthermore, Afshan & Sharif (2016) proves that task-technology, initial trusts, and facilitating condition have a significant role in mobile banking in Pakistan.

The increase in the use of synthetic money in the digital economy (including online transactions) was determined by consumers' income level. Consumers with high-income levels are more likely to use banking payment systems, which reduces the time consumed in digital transactions. Meanwhile, the modern banking system provides modern digital transaction system to optimize time use in banking. This means that time is very important in a modern digital economy. Some people use synthetic money in their payment systems. The increase in synthetic money means that banking use is very high.

Presthusa & O'Malley (2017) find two groups of existing user and non-user bitcoin as digital money where existing user motivated by technological curiosity and not by monetary incentives or external influences. This means that technological factor is important in digital money. However, as it is a developing country, synthetic money is not widely used in Indonesia. So, the use of banking in Indonesia,

especially in Aceh, is an interesting topic for study because some people still use non-banking payments in their online transactions. As a novel strategy, this study examines the use of banking in Aceh Province.

2. LITERATURE REVIEW

Several studies about internet banking have been done such as Daneshgadeha and Yıldırım (2014) analyzed factor affecting internet banking usage in Turkey by using structural equation modelling (SEM). They found that costumers prefer to use internet banking in Turkey because it is useful and easy to use. This means that usefulness and easiness are important factors affecting internet banking. However, Takieddine and Sun (2015) showed in their study that internet access has huge disparity hence has difficulty in internet banking development (Yang et al., 2019; Soo et al., 2019; Matandare, 2018; de Arriba Pérez et al., 2016).

Laukkanen (2016) explored why some consumers reject or accept the internet and mobile banking in Finland using binary logit model where five adoption barrier variable adopted in the study (usage, value, risk, tradition, and image) and demographic variables (gender, age, and income). He found that usage barrier is not an issue influencing consumer adoption/rejection decisions in the internet and mobile banking. Furthermore, younger people are more likely to adopt

internet banking than their older counterparts. Arango et al., (2015) found that consumers use cash because it is easy to use and widely accepted. However, the effects of credit card rewards plans induce substitution away from not only cash but debit cards. This result was supported by the finding of Malaquias et al., (2018), the cache discount has an effect on payment choices. The reward has also a significant role in determining payment choices.

Advanced payment systems have effects of e-commerce mobile shopping in recent years. This is supported by the work of Huang et al., (2016) that analyzed web and mobile shopping channels in China. The study showed that the adoption of the mobile channel, the purchases on the web channel, and at the same time the consumers' purchases increased overall, suggesting that the positive synergy effect of the new channel overrode the negative cannibalization effect.

The analysis of banking usage is a more appropriate logic model. For example, Liébana- Liébana-Cabanillas & Lara-Rubio (2017) concluded that the most significant factors in the logistic regression model regarding the intention to use of mobile payment systems. This means that the logit model is more suitable in analyzing payment choices. The same model was utilized by Atay & Apak (2013) in analyzing the effect of income in internet banking usage. According to these studies, this paper uses the same model because the logic model is the most appropriate model in choice modelling (Indriastuti, 2019; Ayebo & Mrutu, 2019).

3. RESEARCH METHODOLOGY

Data

There are three regencies that were selected as sample sites because they are accessible by a direct flight from Medan, a major city on Sumatra. The respondents from the regencies were selected proportionately, based on the number of households in the respective regencies. The regencies selected also represent the capital of Aceh (Banda Aceh), the western region of Aceh (Aceh Barat) and the eastern region of Aceh (Lhokseumawe). The number of samples was calculated using the Slovin formula:

$$n = \frac{N}{1+Ne^2} \quad (1)$$

The margin of error was set at a 5 per cent level, with a confidence level of 95 per cent. The number of samples from the regencies are presented in Table 1.

No.	Regencies	Households	Sample Size
1.	Banda Aceh	62,774	161
2.	Lhokseumawe	44,165	113
3.	Aceh Barat	49,050	126
Samples		155,989	400

Table 1: Household and Samples

Source: Badan Pusat Statistik (Statistic Board of Aceh), Aceh Dalam Angka (Aceh in Figures) 2017.

Households were randomly chosen from the regencies to be respondents in this study. This means that every household had the same chance to be chosen as a sample.

Model

As mentioned before, the study analyzes the use of banking in online transactions in Aceh. Based on this, the logistic model is most suitable for this study. There are four independent variables in the study: income, educational level, family size, and age. The dependent variable is the use of banking. The formula of the logistic model is:

$$B = \beta_1 + \beta_2 Y + \beta_3 E + F + \beta_5 A + \beta_6 A^2 + \varepsilon \quad (2)$$

The income examined in the study (Y) refers to monthly income in Indonesian rupiah (IDR). The educational level (E) refers to years of schooling. Age (A) represents the respondents' age in years. Banking use (B) is a dichotomous variable, with a value of 1 when respondents utilized banking and 0 for otherwise. This means that if the respondents used another payment system, such as cashier, merchandise, or transfer, this value is represented by 0 in the model.

4. RESULTS AND DISCUSSION

Statistics

The number of respondents who conducted online transactions varied among the regencies. Banda Aceh is more developed in online transactions. 92.55 per cent of respondents in Banda Aceh reported engaging in online transactions, compared to 62.70 per cent in Aceh Barat and 86.73 per cent in Lhokseumawe. There were still respondents that did not engage in online transactions. The fewest respondents not engaged in online transactions were found in Banda Aceh. This is reasonable because this regency is more developed compared to other regencies. The least developed regency in Aceh Barat, where 37.30 per cent of respondents reported not conducting online transactions (see Table 2 for more details).

Online Transaction	Regencies (%)		
	Banda Aceh	Lhokseumawe	Aceh Barat
Yes	92.55	86.73	62.70
No	7.45	13.27	37.20

Table 2: Respondents' Online Transactions

Source: Field research, 2018.

Meanwhile, 78.22 per cent of respondents in Banda Aceh reported using banking payment systems in their online transaction payments, compared to 69.03 per cent and 63.49 per cent for Lhokseumawe and Aceh Barat, respectively. These figures explain that

banking use is relatively low in Aceh Barat and Lhokseumawe. On average, 70.25 per cent of payments in this area was done via banking systems, while nonbanking payment systems accounted for about 5.44 per cent (See Table 3).

Payment System	Regencies (%)			Average (%)
	Banda Aceh	Lhokseumawe	Aceh Barat	
Banking	78.22	69.03	63.49	70.25
Nonbanking	4.39	7.96	3.97	5.44
Non-online	17.39	23.01	32.54	24.31

Table 3: Payment System of Online Transactions

Source: Field research, 2018.

Table 3 shows that banking system payments in Banda Aceh were more frequent than in other regencies, and therefore also above average. This means that the adoption of banking systems is more developed in Banda Aceh than in other regencies. Meanwhile, non-online payments were more frequent in Aceh Barat than in other regencies, which is therefore above the regency average in non-online payments. Based on this data, there is a good opportunity to increase online transactions in Aceh Barat and Lhokseumawe.

Use of Banking

According to Table 4, which shows the estimated logistic model, there were two variables with a positive and significant effect:

income and education. All other variables had no statistically significant effects. This means that, if income increases by 1 unit, then banking use increases by a factor of 1.099. Meanwhile, if education increases by 1 unit, then the use of banking increases by a factor of 1.134, ceteris paribus.

Variable	Coefficients	SE	Wlad	df	Sig.	Exp (coefficient)
Constant	-4.433	0.966	12.618	1	0.000	0.032
Income	0.095	0.033	8.245	1	0.004	1.099
Education	0.126	0.058	4.703	1	0.030	1.134
Family	0.057	0.059	0.931	1	0.335	1.059
Size	-0.075	0.154	0.238	1	0.626	0.928
Age						

Table 4: Estimated Logistic Model

Source: field research, 2018.

Based on the results of the study, education is the most important factor affecting the use of banking, followed by income. This means that education plays an important role in determining banking use. The government should promote education to increase the education level of society in order to allow people to use banking in their daily activities, including online transactions. This result is consistent with the work of Gaspareniene et al., (2015).

5. CONCLUSION

Banking payment systems were relatively under-utilized in the areas studied. Some respondents reported not using banking systems in their daily activities. Furthermore, some respondents reported not engaging in online transactions, even though online transactions have many potential advantages for respondents. This study identified two variables that significantly and positively affect the use of banking: income and education. Education had the biggest effect on banking use in this study, followed by income.

Based on these findings, Bank Indonesia, in its role as a central bank in Indonesia, should encourage people to use banking services to support daily transactions, including online transactions. Bank Indonesia should ask commercial banks to assist people in utilizing banking services for daily transactions.

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