Is Financial Inclusion Driven by Mobile Payment Characteristics and Financial Literacy?

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Abstract. Indonesia as the fourth largest unbanked population in the world described the issue of financial exclusion. The Indonesian government has been promoting a cashless society by implementing mobile payment to promote financial inclusion. Therefore, this research aims to execute mobile payment characteristics and financial literacy to determine financial inclusion. Mobility, compatibility, reachability, and convenience are the mobile payment characteristics, while financial knowledge, behavior, and attitude are the indicators of financial literacy. This research employed multiple linear regression by generating primary data in form of a questionnaire and distributed it to 200 respondents who are millennials within the Jabodetabek area. The findings revealed that as the mobile phone is carried around thus the respondents could utilize m-payment anytime and everywhere, ease the users, and implementation of the newest technology could promote financial inclusion. Special knowledge about mobile payment is unnecessary because it is user-friendly, and they could easily manage their finances.

Keywords: Financial inclusion, mobile payment characteristics, financial literacy, multiple linear regression

1 Introduction

Home to 95 million adults, Indonesia remains unbanked as the top 4 of the world's largest unbanked population. The third national survey on financial literacy and inclusion conducted by Indonesia's financial services authority (OJK) in 2019, found that the index of financial literacy and inclusion reached 38.03% and 76.19% respectively, which was only 29.7% and 67.8% respectively in 2016. Although there was an escalation for about 8.33% of financial literacy understanding and 8.39% access to financial products and services, Indonesia still far-off in achieving 90% of financial inclusion as targeted by Indonesian president, Joko Widodo [1].

Since 2012, the National Financial Inclusion Strategies (NFIS) of Indonesia has launched action roadmaps to achieve broader access of financial system to the entire layers of the community in promoting economic growth, reduction of poverty, and income equality [2]. Therefore, people can participate to be part of the financial system itself [3]. The strategies are

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supported by the World Bank Group (WBG) in a form providing support technically, including payments and financial literacy [2].

Aligned with Indonesia's NFIS that supported with WBG, financial inclusion is driven by financial literacy [4] and mobile money or digital financial product usage [4], [5]. In which we believe that the characteristics of mobile payment (m-payment) also determine financial inclusion. The prior research employed m-payment characteristics to determine the intention to use m-payment [6], [7]. Therefore, we would like to fill the research gap by employing m-payment characteristics as financial inclusion determinants along with financial literacy.

M-payment is a payment tool and electronic invoices that utilize the internet and technology which are equipped with interesting features [8]–[10]. For the first time in 2019, the use of the mobile phone as a shopping tool had a higher percentage compared to PC and tablet. Thereafter, the level of m-payment usage in Indonesia is higher than in the Middle East. It also proved that m-payment became a familiar financial transaction since then [11]. It is because of the m-payment characteristics [7], [10].

A large scale of customer could be reached by most people in developing countries through digital technology if it is affordable and easy, thus financial inclusion issues will be solved. The innovations of technology are bringing the users of m-payment into the market [12]. Hence, the use of mobile money could promote financial inclusion because it can help people to manage the risk of financial [13]. People should have a well understanding of financial literacy to decide the financial products and services to be used. It is the ability, knowledge, and belief that will affect an individual's financial decision-making. The three indicators of financial literacy are financial knowledge, financial behavior, and financial attitude [14], [15].

This research targeted millennials as the respondents of the survey because they are categorized as a tech-savvy generation [6] who are located in the Jabodetabek areas. Millennials were raised during technology advancement and thus they are familiar with it. However, they are passive users with limited financial literacy and without having a deep understanding that m-payment could boost up financial inclusion promotion. Through this research, we highlight the main contributions are m-payment characteristics as a new determinant of financial inclusion and better understanding and analysis about financial literacy and inclusion from millennials' perspective.

2 Literature Review and Hypotheses Development

2.1 Financial Inclusion

Financial inclusion provides access to financial services to the population, especially to the people at the bottom of the pyramid [16]. Through financial inclusion, the government expects that people could experience a good quality of financial services at low cost for their well-being [17]. Some of the practices of inclusive finance are bank account opening that required fewer documents and accessing financial products and services using mobile technology [18]. The indicators to measure financial inclusion are access, usage, and quality. Access is defined as the ability of society to reach the financial services through bank branches penetration in rural areas or the access to financial institutions in regards the information or cost. Usage is the habit and duration of the society in utilizing financial products and services from time to time. While quality describes whether a customer's needs are matched with the financial products and services as well as the ability to understand [19].

2.2 Mobile Payment Characteristics

Mobile payment is a form of technology development that can be used to support daily needs, especially in finances [7], [10]. According to the rapid growth of technology, good characteristics of m-payment should be identified [9], in which the characteristics are: mobility, compatibility, reachability, and convenience [7].

Mobility is defined as the ability of users to carry mobile devices and use them for transactions anywhere with an internet connection. The advantage of mobile payment is the flexibility to use that fits the user's activity. Compatibility is the possibility of m-payment to have innovations and compatible to the newest technology. It considers the expectation for new features, useful and, provides many benefits (16). Reachability makes people possible to be contacted anytime and anywhere through mobile devices. It also provides people with choices to limit themselves either with a particular person or time [6]. Convenience is providing users with ease-to-use and comfortable devices within place and time [7].

A better characteristics of m-payment (mobility, compatibility, reachability, and convenience) increase the intention to use m-payment [6], [7], [10], [18]. When financial services could be accessed by the excluded people through mobile phone as a tool, it could promote financial inclusion [5], [21], [22]. M-payment mobility [7], [23], compatibility [6], [18], reachability, and convenience [6], [9], [10] increase the intention to use m-payment, thus it leads to inclusive finance [4], [5] because there are a lot more people could utilize the financial services. Therefore, several hypotheses of m-payment characteristics are proposed:

H_1. Mobility of m-payment has a positive impact on financial inclusion.
H_2. Compatibility of m-payment has a positive impact on financial inclusion.
H_3. Reachability of m-payment has a positive impact on financial inclusion.
H_4. Convenience of m-payment has a positive impact on financial inclusion.

2.3 Financial Literacy

It is a big homework for Indonesia to boost up financial literacy and hence financial inclusion could be achieved. It is defined as a process or activity to improve the knowledge, skills, and abilities of individuals and teams to manage their finance optimally. It can improve the well-being and well-decision making of investment [14], [24]. Financial literacy could be measured through financial knowledge, behavior, and attitude [14], [15].

An individual can choose financial products and services, monitor their finance, and analyze the related financial information if they have well-understanding of financial knowledge. Thus, they could deal with the right decision-making on investment [25]. Financial knowledge is the foremost thing to empower and educate society [26].

Once an individual has the knowledge, it is important for them to apply those financial principles into an act and thus create and preserve the value through the right decision making. Financial behavior is the psychological character of a person related to their personal financial issue [27]. It refers to systematic financial management such as plan stable savings and a particular financial goal. The usage of financial technology in accessing financial information is a form of financial behavior [21].

Moreover, financial attitude is a condition about thoughts, opinions, and judgments about finances. It is related to personal state of mind in communicating opinion in the financial industry [22], the financial responsibility of financial management for instance. A person who is responsible for their financial condition will be able to manage the use of their money effectively by controlling expenses, investing, and paying the bills on time.

When those acts are applied, the society could be categorized as having good financial literacy, thus financial inclusion could be promoted [12], [28], [29]. Interestingly, even though an individual does not know finance, they are still m-payment users. They can manage their finances through m-payment and responsible for the entire financial decision-making. Therefore, the hypotheses of financial literacy are proposed:

H_5. Financial knowledge has a negative impact on financial inclusion.
H_6. Financial behavior has a positive impact on financial inclusion.
H_7. Financial attitude has a positive impact on financial inclusion.

The conceptual framework of research is proposed below, see **Figure 1.** Conceptual Framework

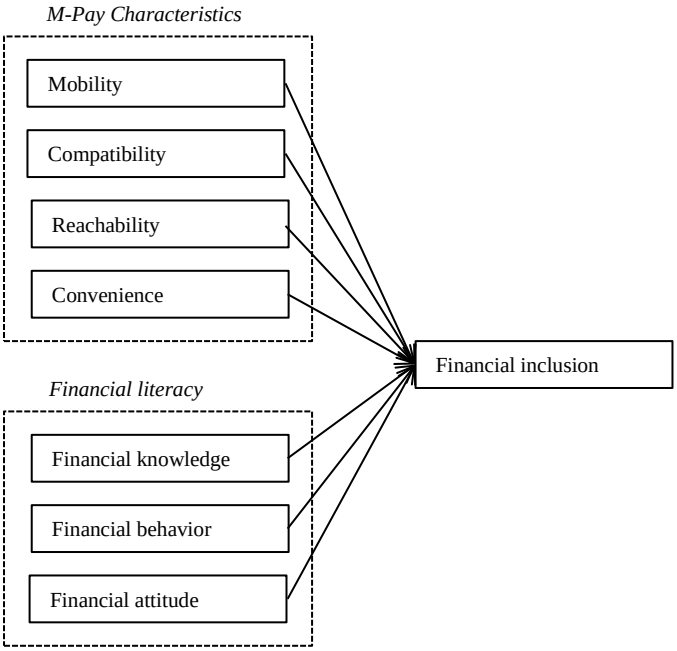

Fig. 1. Conceptual Framework.

3 Methodology and Data Analysis

This research applied primary data with quantitative analysis. Millennials who were born between 1982 – 2000 [30] that currently stay in Jakarta, Bogor, Depok, Tangerang, and Bekasi (Jabodetabek) area were the respondents of the survey. They were also actively using any kind of m-payment. Google form was the tool to distribute the questionnaire and 220 respondents filled the questionnaire, but 20 of it cannot be used. Therefore, the final respondents were 200 as the samples. The research sample is sufficient when the respondents are 30-500 people [31], thus this research has sufficient data. A pilot study was done to test the validity and reliability of the questionnaire filled by the first 30 respondents. Once the questionnaire was valid and reliable, then the questionnaire was distributed again to fulfill the research sample. Respondents were required to answer by giving a score from 1 to 5, in which 1 point as strongly disagree to 5 points as strongly agree. Normality, multicollinearity, and heteroscedasticity tests were tested as part of the classic assumption test. Afterward, Multiple Linear Regression was applied to test the hypotheses that consist of 7 independent variables and 1 dependent variable. Data was proceeded by SPSS version 23. Below is the equation:

$$FI = \alpha + \beta_1 MOB + \beta_2 COM + \beta_3 REA + \beta_4 CON - \beta_5 FK + \beta_6 FB + \beta_7 FA + \varepsilon \quad (1)$$

Where FI is financial inclusion, MOB is mobility, REA indicates reachability, CON refers to convenience, FK represents financial knowledge, FB defines financial behavior, FA indicates financial attitude, α is constant, β is coefficient, ε refers to the error term.

4 Research Result and Discussion

4.1 Validity and Reliability test

All the variables: independent and dependent variables were valid because the R-value is greater than R-table (0.139). Each variable consists of 3 mobility statements, 3 compatibility

statements, 3 reachability statements, 4 statements of convenience, 5 statements of financial knowledge, 6 and 4 statements of financial behavior and financial attitude, respectively. Every single indicator of financial inclusion: access (5 statements), usage (4 statements), and quality (3 statements) were all valid. As for the reliability test, Cronbach's alpha was done and each statement of the questionnaire that represents each variable should be > 0.60. The results revealed that all Cronbach's alpha was > 0.60, thus the independent and dependent variables were reliable.

4.2 Classic Assumption Test

Based on table 1, Kolmogorov-Smirnov to test the normality revealed an insignificant probability (0.074 > 0.05). It proved that the data were distributed normally. The probability results of heteroscedasticity based on the Glejser test also revealed an insignificant p-value on the entire independent variables (p-value > 0.05). Thus, there was no heteroscedasticity issue. As for the multicollinearity test, the entire tolerance and VIF values of the independent variables were > 0.10 and < 10, respectively. It proved that there were no multicollinearity problems among the independent variables. Therefore, the multiple linear regression could be executed.

4.3 Multiple Linear Regression and R-square results

This research aimed to find the impact of m-payment characteristics and financial literacy on financial inclusion. Out of seven independent variables, five independent variables, namely: mobility, compatibility, convenience, and financial behavior positively impact financial inclusion, while financial knowledge negatively impacts financial inclusion. These 5 independent variables have significant p-values (p-value > 0.10), thus H1, H2, H4, H5, and H6 were supported. The implementation of innovation and the newest technology (compatibility) proved to be the most powerful factor of financial inclusion. The r-square result proved that the entire independent variables could explain financial inclusion for about 51.6%. The remaining 48.4% were explained by the other variables excluded in this research.

Table 1. Hypotheses Development Test

Attributes	Coef	T-Stat	P-Values	Results
MOB →FI	0.180	2.729	0.007	Supported
COM → FI	0.756	7.439	0.000	Supported
REA → FI	-0.061	-1.002	0.317	Not Supported
CON → FI	0.149	2.024	0.044	Supported
FK → FI	-0.103	-2.465	0.015	Supported
FB → FI	0.098	1.767	0.079	Supported
FA → FI	0.052	0.733	0.465	Not Supported

4.4 Discussions

Better mobility increases inclusive finance since the easier m-payment to be carried around and could conduct transaction anywhere and everywhere will increase financial inclusion. It supports the prior researches that mobility positively impacts the intention to use m-payment [7], [23] and hence increases financial inclusion [5]. The newest technology as an innovative improvement proved the compatibility that needs by the users. It revealed that compatibility positively impacts financial inclusion and it supports the previous research (29,30). The convenience of m-payment users increases their willingness to utilize and hence it promotes financial inclusion. (8,14,16).

Less knowledge about m-payment does not identify a better financial inclusion which concluded a negative impact of financial knowledge on financial inclusion. Knowledge about finance negatively impacts financial literacy and hence lessens financial inclusion [12]. Managing their finances as the implementation of behavior in finance increases the awareness of financial management and hence promotes financial inclusion. Meanwhile, reachability and financial attitude were found to be insignificant factors in financial inclusion.

5 Implication and Suggestion for Future Research

The shifting habit of the society from traditional to digital required a dramatic change to the needs and wants of society, thus financial services should adjust themselves to keep up with the current condition. Indonesia as a developing country is far away from inclusive finance, in which financial products and services could not be utilized by the entire layers of the population. Categorized as the fourth largest unbanked society in the world, it is due to the rigid rules and regulations of the banking industry as the biggest player of financial services in Indonesia.

As people carry around their mobile phones, it is easier for them to conduct a transaction through it. It also goes along with the government of Indonesia in creating a cashless society. Since then, numerous m-payments came within the society to promote financial inclusion because of the characteristics of m-payment itself. This research proved that mobility, compatibility, and convenience as the characteristics of m-payment could promote financial inclusion. The flexibility of m-payment in offering the advantages to be able to conduct any kind of transactions anytime and everywhere, ease the users because it implements the newest technology. As the society in all layers carry their mobile phone with them and financial services are provided in it, inclusive finance could be achieved. Financial literacy also could boost up financial inclusion. As m-payment is provided in the most crucial thing (mobile phone) for an individual, they can just utilize m-payment easily since the application is user-friendly. Therefore, a broad knowledge of m-payment was found to be unnecessary because they simply know how to manage their finance through mobile phones.

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6 Reference

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