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The implementation of fintech: Efficiency of MSMEs loans distribution and users' financial inclusion index

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Abstract

The importance of understanding the efficiency of lending MSMEs through fintech peer-to-peer lending (P2P Lending) and increasing the financial inclusion index of its users (for lenders in particular). We use case studies on the accelerant platform with grounded research methodology for data collection, estimation of technical efficiency and intermediation through Data Envelopment Analysis (DEA). Descriptive analysis is used to investigate the determinants that influence the financial inclusion index of acceleration users. We indicate that technical efficiency has a much smaller value than the efficiency of intermediation with a strategy required to improve business optimization and steer clear from any conditions of constant to return. In addition, factors considered in the strategy-making are loan period which has a positive effect on the business efficiency and non-performing loans that are not affected by intermediacy efficiency as well as strategies to improve the index of financial inclusion as targeted by the Financial Services Authority through the Strategy National Financial Inclusion. In other words, the index of financial literacy, income level, and index of fintech knowledge have a positive effect on the financial inclusion index.

Abstrak

Pentingnya memahami efisiensi penyaluran pinjaman UMKM melalui platform fintech (P2P Lending) dan tingkat inklusi keuangan penggunanya (lender). Kami melakukan studi dengan pendekatan studi kasus pada platform akseleran. Metodologi yang digunakan adalah dengan menggunakan pendekatan grounded research dalam pengumpulan data, perhitungan efisiensi teknis dan intermediasi dengan menggunakan Data Envelopment Analysis. Analisis deskriptif digunakan untuk dapat mengetahui faktor-faktor yang berpengaruh terhadap tingkat inklusi keuangan pengguna. Kami menemukan bahwa efisiensi teknis memiliki nilai yang jauh lebih kecil dibandingkan dengan efisiensi intermediasi yang menyatakan bahwa diperlukan strategi untuk meningkatkan optimalisasi usaha dan menghindari kondisi constant to return. Hal-hal yang dapat dipertimbangkan dalam penyusunan strategi tersebut antara lainnya adalah periode pinjaman yang memiliki pengaruh positif terhadap efisiensi usaha dan non-performing loan yang tidak berpengaruh terhadap efisiensi intermediasi serta upaya untuk dapat mencapai target inklusi keuangan Indonesia yang telah ditetapkan oleh Otoritas Jasa Keuangan melalui Strategi Nasional Inklusi Keuangan. Tingkat literasi, tingkat pendapatan dan tingkat pengetahuan tentang fintech memiliki pengaruh positif terhadap tingkat inklusi keuangan.

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1. Introduction

Indonesia has a proportion of unique mobile users up to 133 percent of the total population (Otoritas Jasa Keuangan, 2019). In the meantime, this country also has quite a large number of internet users reaching 150 million people with a progress of 13 percent (Otoritas Jasa Keuangan, 2019). These indicate promising market size, potential growth, and development of financial technology (fintech) in Indonesia. Bakker (2016) explains that fintech is a general term that illustrates the disruptive technology in the sector of financial services. The fintech has successfully integrated technological advances with financial services to minimize the barrier-to-entry and to make better performance of financial intermediaries. Recently, the most frequently promoted financial service is an information technology-based peer-to-peer lending or P2P Lending.

One of the fintech implementations in lending is P2P Lending. It is a technology platform that digitally connects borrowers who need venture capital with lenders who look for any competitive returns. Based on POJK No.77/01/2016, information technology-based lending and borrowing services are financial service providers that directly connect lenders with borrowers upon loan agreements in a currency of rupiah through an electronic system with the internet network. Berger & Gleisner (2009) that significantly improves the debtor credit conditions by reducing asymmetric information, particularly debtors with more unappealing characteristics.

The growth estimation of P2P Lending in Indonesia has been quite good from time to time. As of December 7, 2018 (*Otoritas Jasa Keuangan*, 2018), 78 companies P2P Lending in Indonesia have been licensed and registered. Based on INDEF research in 2018, P2P Lending companies have contributed to the economic growth of Indonesia as well, one of which is proven by an increase in lending, especially to the MSMEs sector (*Otoritas Jasa Keuangan*, 2019). In spite of that, the magnitude of growth and performance of P2P Lending are unable to outperform

conventional financing institutions' lending to MSMEs. The Coordinating Ministry for Economic Affairs (2019) affirms that the accumulated amount of loan disbursement as of January 2019 was IDR 26 trillion, while lending by conventional financing institutions through banks and People Business Credit Program had climbed to IDR. 1,296,058 trillion.

Several kinds of the literature shows that fintech provides an opportunity to increase financial literacy, financial inclusion, as well as the efficiency of intermediary institutions with the support of information technology. The growth of the P2P Lending platform is relatively rapid with an increasing number of platforms, users (both lenders and borrowers) and the distribution of funds. Despite that, the contribution of lending through the P2P Lending platform to total loans is still quite small to which raises the question whether the implementation of P2P Lending can meet the expectations of public and regulators for the increase in MSMEs loan disbursement by increasing the efficiency of lending and inclusion index of users. Therefore, this study aims at understanding MSMEs loan disbursement organized by P2P Lending platforms, by investigating the intermediation efficiency, business efficiency, loan characteristics such as loan period and risk (NPL) as well as the index of literacy and financial inclusion.

The accelerant platform was selected as a subject of a case study due to the suitability of the business and population of the borrowers, i.e., MSMEs and SMEs. The accelerant platform is one of P2P Lending platforms that has distributed productive loans for more than two years by means of various loan products. The commitment of accelerant platform, as embedded on its vision, is to develop MSMEs in Indonesia that subsequently brings to the selection of sample for this study. Through a case study, it will improve some knowledge about the P2P Lending platform's lending to MSMEs as well as assist its innovation and offer solutions on the financial intermediation problems for MSMEs.

2. Hypotheses Development

According to Furche et al. (2017), fintech brings a positive impact on several aspects of financial inclusion such as loans and credit scoring for households and companies that have not granted access to the banking system. The fintech platforms provide a range of financial products and services that assist the community to improve financial literacy and financial inclusion. A variety of theoretical and empirical studies show that the implementation of the P2P Lending platform has influenced the distribution of MSMEs loans and the index of financial inclusion of the users. Therefore, these empirical studies offer a baseline on the formulation of hypotheses and framework with the following details.

P2P Lending platform has expectedly increased the literacy index and inclusion index of the public. Lusardi & Mitchell (2017) further explain that a low financial literacy index will reduce the efficiency of individuals in the making of financial decisions about intricate financial issues. Further, Cole, Sampson, & Zia (2009) affirms that financial literacy is one of the determinants of credit accessibility. The index of financial literacy becomes very important in the distribution of MSMEs loans through P2P Lending platforms, both for borrowers and lenders (Han et al., 2018). Santoso, Trinugroho, & Risfandy (2019) stated that in P2P Lending, lenders must be able to assess the eligibility of borrowers through information provided by the platform. Thus, the first hypothesis is formulated as follows:

H_1: distribution of MSMEs loans through the P2P Lending platform influence the financial literacy index of users

The information and communication technology expectedly increase financial inclusion (Ummah, Nuryartono, & Anggraeni, 2015). The remark corresponds with the 2017 Revisit SNLKI that digital financial services are designed to facilitate the public in the use of financial products and services. The

fintech implementation in P2P Lending will reduce costs and widen up the flow of information so that increasing financial inclusion. Based on research by Muzdalifa, Rahma, & Novalia (2018), there exists the impact of fintech implementation on the increase in public financial inclusion index. Andrianaivo & Kpodar (2011) explains that technological advances in mobile phones influenced financial inclusion and economic growth. Therefore, the second hypothesis is formulated as follows:

H_2: distribution of MSMEs loans through the P2P Lending platform influences the financial inclusion index of users

A number of previous studies have investigated measurements and determinant factors of literacy index and financial users. An extensive study by Tsalita (2016) shows that demographic factors are generally related to financial management and specifically related to credit decision making. According to Rita & Kusumawati (2010), demographic factors include education, employment, income, age, and financial literacy. However not all demographic factors have a significant relationship with the index of financial inclusion. Therefore, the third hypothesis is formulated as follows:

H_3: there exist demographic factors that influence the financial inclusion index of users

Well literate individuals (of financial literacy) understand details of the financial services more easily so that eventually allow them optimally use financial products and services and to improve welfare and self-protection against any potential losses due to financial crime (FSA, 2017). It implies a direct and indirect relationship between the index of financial literacy and public access to services provided by financial intermediary. Some previous studies reveal the influence of financial literacy index on financial management, both for individuals and MSMEs. A study by Muat, Miftah, & Wulandari (2014) asserts that the relationship exists between

financial literacy and personal loan decisions. In the meantime, Anggraini (2015) reveals the influence of literacy index on MSMEs financial management. Therefore, the fourth hypothesis is formulated as follows:

H_4: the financial literacy index of P2P Lending users influence the financial inclusion index

Some information published in Global Findex 2017 explains the index of financial inclusion and how fintech affects the index of financial inclusion. The implementation of fintech in mobile money accounts reportedly reduces the gap between the index of financial inclusion and the index of welfare, age, and gender. However, gaining access to fintech requires sufficient knowledge, especially information in detail about fintech for optimal use. Therefore, the next hypothesis is formulated as follows:

H_5: the fintech knowledge index influences the financial inclusion index of the P2P Lending users

When financial intermediaries are able to reduce costs and risks, they will improve performances such as the increase in technical efficiency (production) as well as intermediation efficiency. Various strategies can be used by financial intermediaries to reduce transaction costs, such as utilizing economies of scale, economies of scope, and reducing asymmetric information. Khan (2013) asserts that efficiency improvement can emerge from either the economy of scope or fintech. Through technology, P2P Lending gains access to almost anyone, anywhere effectively, and efficiently. However, to date, the contribution of P2P Lending to MSMEs remains unknown. The spreading of information technology provided by the P2P Lending platform reportedly reduces asymmetric information in the intermediation process.

H_6: the efficiency index of financial intermediary P2P Lending is affected by non-performing loans

The implementation of information technology through the P2P Lending platform expectedly increases business efficiency in lending using the P2P Lending platform and to provide better matching maturity between lenders and borrowers so there exists an increase in loan distribution. The loan period is the number of days from the day loan given until the due date (the day when the principal and all remaining interest must be paid). Some literary sources that examine the effect of loan periods on online loans. Lee & Lee (2012) show that lenders tend to choose short investments, or in this case short-term loan periods, to reduce risk. However, a longer loan period will attract lenders because it can provide interest payments in the longer term. Han et al. (2009) assert that the loan term is positively associated with successful funding. Therefore, the seventh hypothesis is formulated as follows:

H_7: the efficiency index of financial intermediary P2P Lending fintech is affected by loan period.

3. Method, Data, and Analysis

This research employs the grounded theory approach, also known as grounded research. Thus, in collecting data and information, it uses DEA to calculate the efficiency of analysis and conduct the hypothesis testing for further analysis. The research procedures of grounded theory consist of several simultaneous stages, such as (1) problem formulation; (2) theoretical study; (3) data collection and sampling; (4) data analysis; and (5) the conclusion or report writing.

In Figure 1, there exists a framework of study in which NPL and loan periods affect MSMEs loan disbursement through the P2P Lending platform which respectively includes NPL loans that influence the efficiency of intermediation and the loan period that influences business efficiency. In addition, the distribution of MSMEs loans through the P2P Lending platform will bring impact on the in-

dex of financial literacy and index of financial inclusion of users, which is limited to the scope of the lender. However, to investigate factors that influence the index of financial literacy and index of financial inclusion, some variables such as demographic factors and index of financial literacy will be analyzed further.

The study uses primary data and secondary data. The primary data is based on a survey directly taken from a questionnaire survey. The survey was distributed to the users of the accelerant platform using Google form. The primary data for financial literacy i.e., attitude, knowledge (about financial products and fintech), behavior and financial inclusion are collected from the questionnaire. The ques-

tionnaire was adopted from various studies related to the measurement of financial literacy and inclusion with the main reference of the National Survey of Indonesian Financial Literacy (SNLKI) and the Organization for Economic Co-operation and Development (OECD). The secondary data are non-performing loans (NPL), lending and successful fundraising which are used to provide sufficient knowledge of variables, including the input and output variables in DEA and lending. The secondary data is used to measure and analyze the efficiency of the platform and get in-depth knowledge about loan disbursements through the accelerant platform to MSMEs.
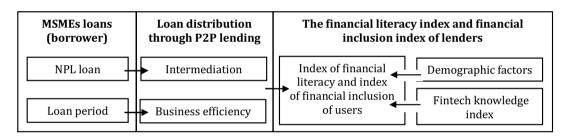

Figure 1. Framework of the efficiency of MSMEs loan distribution and users' index of financial inclusion

Table 1. Research variables

Variables		Data	Information	Source
Distribution of Loans to MSMEs	Characteristics of lending to MSMEs	The loan period is distributed to MSMEs	The loan period that is calculated in months, based on the calculation of the provisions	Loan distribution database
	The quality of lending to MSMEs	Net Performing Loan	Bad loan ratio (>90 days)	Bad loan database
Efficiency	Business Efficiency	Loan Provision	Input variables	Fundraising database
	Intermediation Efficiency	Fundraising	Input variables	
		Loan distribution	Output variables	Database of loan distribution
Financial literacy and inclusion	Financial literacy and inclusion index	Financial literacy	Public understanding of financial management	Survey Questionnaire
		Financial inclusion	Public access to financial products and services	Survey Questionnaire
		Fintech Knowledge	Public knowledge about Fintech products	Survey Questionnaire
		Demographic factors	Income, Education, Employment, etc.	Survey Questionnaire

The measurement of intermediation efficiency uses Data Envelopment Analysis (DEA). In addition, DEA makes the assumption that efficiency will obtain the optimum combination of inputs and outputs. The variable selection is based on both input and output variables to analyze the efficiency from previous studies and literature, which have been modified for the research object of the P2P Lending platform. The result of DEA data processing appears in a ratio that will be used further into regression analysis. Research variables representing loan disbursement index are NPL and loan period. Both variables were selected due to a proxy of characteristics of lending to MSMEs such as quality (NPL) and the loan period. Another reason why this variable was selected is its relationship with the intermediation process of the P2P Lending platform, particularly accelerant. NPL is a measurement tool that is frequently used to examine the quality of loan distribution. Meanwhile, the loan period is one of the determinant factors of a provision that functions as a multiplier of provisions that must be paid by borrowers.

After performing the efficiency analysis, it continued with regression analysis. The regression analysis was carried out to measure the relationship between variables in this study, including demographic factors, literacy index, inclusion index, and the knowledge index of fintech platform users. In this study, the scope of respondents was limited to lenders as a center of interest on the understanding of the P2P Lending platform users as investors who previously had access to financial services, both provided by conventional financial institutions and fintech. Thus, the knowledge about the index of financial inclusion and index of financial literacy can be acquired in-depth.

4. Results

Accelerant platform profile

Data and information acquired from the discussion, data processing and data analysis given by the accelerant platform are very beneficial for this research. The following is a general description of the acceleration platform. Accelerant is a peer-to-peer lending platform in Indonesia that connects SMEs who need loans to develop businesses with a group of lenders who have more funds to finance the loans. It does not offer any recommendations of investment/loan and does not administer investment/loan from the registered users on this site. Accelerant has the role to organize an integrated crowdfunding site www.akseleran.com that connects startups, early-stage businesses and SMEs that need loan-based capital or equity participation with potential investors, and to administer well-organized administration of the fundraising campaign that was successfully accomplished. Accelerant (PT Accelerant Financial Inclusive Indonesia) has been registered with OJK since June 21, 2017, with letter number S-2983/NB.111/2017.

The number of lenders on the accelerant platform as of March 2019 is around 120,000 while the number of borrowers is 450. As of March 18, 2019, there were 596 loan contracts that had been successfully funded with a total loan distribution of IDR. 334,170,900,000. The effective interest rate earned by lenders is an average of 18-21 percent per year. Each loan opportunity has a different interest rate according to the results of the feasibility analysis and loan risk conducted by the accelerant team. Loan tenors start from 1 month to 24 months. Each loan opportunity has a different loan tenor. When compared to other P2P Lending platforms, for example, Capital Stores by 100 percent and Investree by 99.17 percent, the acceleration platform has a more competitive loan value. The NPL of the acceleration platform as of January 2019 is 0.44 percent while as of March 18, 2019, it is 0.34 percent.

Business efficiency

The analysis of business efficiency uses an input variable approach i.e., profit or business income and the output variable such as SME lending by the

accelerant platform. In this research, profit data or income for each loan is undertaken by the provision received by the accelerant platform. Through efficiency analysis, the business efficiency calculated using DEA has a value of 0.69. From the data processing, accumulative provision earned through the platform will increase if the loan period is longer. Thus, business efficiency will improve along with the lengthier period of loan. However, when considering monthly income, the average monthly provision and business efficiency are not consistent. It shows the effect of the loan period on business efficiency in the distribution of MSMEs loans.
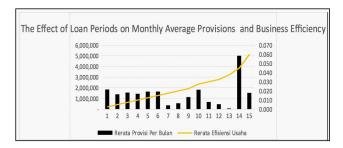

Figure 2. The effect of loan periods on monthly average provisions and business efficiency

Intermediation efficiency

The estimation result of intermediation efficiency among all successfully funded loans through the accelerant platform that are categorized as loans with NPL category, loans with non-NPL category and the total efficiency value is illustrated in Figure 3. Here in the total of intermediation efficiency is 0.9894, nearly close to 1 for almost perfect efficiency. In the category of loans with NPL, the intermediation efficiency value is lower than the intermediation efficiency of loans with non-NPL category. Thus, it can be concluded that NPL loans have lower efficiency values than non-NPL loans. Nevertheless, the difference between the efficiency of intermediation between NPL and Non-NPL loans is not too large (a difference of 0.004).

Figure 3. The efficiency of accelerant

The financial literacy index and financial inclusion index

The financial literacy index and financial inclusion index of accelerant platform users are estimated from data processing of questionnaire surveys filled out by lenders only. As a sample, there were 108 respondents who filled out the online survey. The survey data and information on demographic factors (profiles), financial knowledge, financial behavior, financial attitudes, financial inclusion, and fintech knowledge were obtained from the lenders on the accelerant platform. Then the data and information were further processed, as one of which was the financial literacy index and financial inclusion index showed in Table 2.

The results in Table 3 illustrate the average financial literacy index of 69.87 percent. The number of respondents who had a literacy index of less than 60 percent was 31.1 percent, respondents who had a literacy index of 60-79 percent were 33.6 percent and respondents who had a literacy index above 80 percent were 35.3 percent. The financial literacy index of fintech users – P2P Lending was dominated by more than 80 percent. The average inclusion rate was 33.67 percent. The number of respondents who had an inclusion rate of less than 60 percent was 90.8 percent, respondents who had an inclusion rate of 60-79 percent were 9.2 percent and respondents

who had an inclusion rate above 80 percent were 0 percent. The financial inclusion index of the P2P Lending platform users is dominated by less than 60 percent.

The result analysis of Multiple Linear Regression

The testing of the multiple linear regression model is used to investigate demographic factors that influence financial inclusion index of platform P2P Lending users (lenders). It includes seven independent variables i.e., gender, age, education, employment, income, financial literacy and knowledge of fintech. The dependent variable used in the model testing is financial inclusion. The following are the results of multiple linear regression tests in Table 4.

The regression model in this study has met the classical assumption test. Furthermore, the researcher analyzes the coefficient of determination (R_2) to estimate the percentage of the total variation of the bound variable Y that can be explained by the variation of endogenous variable X. Based on the estimation of the coefficient of determination, the value of adjusted R-square is 67.16 percent of variation can be explained by endogenous variables in the model, the remaining 32.84 percent is explained by exogenous variables.

Table 2. Question items in the online survey

Profile of respondents (Demographic Factors)	Knowledge of fintech
Gender	Resources
Recent education	Use of fintech services
Field of work	
Annual income	
Expenditures per year	
Financial Literacy	Financial Inclusion
A. Financial knowledge	Savings and investment
Simple arithmetic	Payment products
Understanding of currency concepts	Product purchase
Understanding of the concept of interest	Insurance products
Understanding of investment concepts	Loans /credit
Understanding the concept of inflation/currency value	Knowledge of financial institutions
B. Financial Behavior	Knowledge of financial products
Preparation of financial planning	
Financial budgeting	
Product preferences for deposits	
Financial decision making	
Source of financial information	
Financial security when there is less income / more expenditure	
Confidence in finance	
Having financial goals	
Efforts to achieve financial goals	
C. Financial Attitude	
Financial management	
Willingness to savings	
Financial Mindset	

Table 3. Financial literacy indicator

Financial literacy indicator	Low (<60%)	Moderate (60-79%)	High (≥80%)	Average (%)
Literacy index	31.1	33.6	35.3	69.87
Inclusion index	90.8	9.2	0	33.67

5. Discussion

The distribution of MSMEs loans by the accelerant platforms

The accelerant platform only distributes productive loans to MSMEs. The lending index of the accelerant platform is relatively good. It can be seen from the quality and quantity of loan distribution. The good quality of loan distribution is discerned from the relatively small NPL of 0.34 percent and loan distribution to MSMEs up to March 18, 2019, of IDR 334 billion. When compared to lending data published by OJK as of March 2019, the ratio of bad loans – more than 90 days and known as TKB90 (equivalent to NPL) for P2P Lending is 2.62 percent. However, the loan distribution by the accelerant platform is relatively small when compared to the accumulated distribution of P2P Lending loans amounting to IDR 33.2 trillion as of March 2019. The more in-depth analysis of the accelerant platform lending database reveals that the average loan is IDR 561.6 million with a minimum loan size of IDR 10 million and a maximum of IDR 2 billion. While the NPL classified loan has an average of IDR 375.83 million and has a rating of B- to C++. From 597 loans that have been successfully funded, the profile of borrowers from accelerant platform are identified as follow: (1) Having business addresses spreading across the island of Java (mainly in Jabodetabek area), Maluku and Kalimantan (2) owning a range of business lines, mainly in the engineering and construction sector (the most accumulated contracts) as well as office equipment and services (the largest accumulated loan sizes). (3) Dominantly dealing with short-term loan periods (less than one year) (4) Loan repayment rates ranges from 12 percent to 30.72 percent per annum, which is mostly at 18 percent per annum. (5) Most lenders are investors for the electrical equipment sector and the least is in the oil & gas sector (integrated).

Based on the study by Santoso, Trinugroho, & Risfandy (2019), along with the growth of the fintech lending platform, the increased need for MSMEs loans with low accessibility to bank loans will create big opportunities for lending mechanisms through P2P Lending to engage with broader expansion. However, there exist some factors that influence lending through the P2P Lending fintech platform. In the following section, these factors or variables that affect the distribution of MSMEs loans through the P2P Lending fintech platform are explored

Table 4. Summary of Regression Test results

Variable	Coef	SE Coef	T-value	P-value	Information
Constant	-1.600	5.740	-0.280	0.781	
X_1 *(Gender)*					
X_{1_2} *(Female)*	-2.400	3.680	-0.650	0.515	Not significant
X_2 *(Last education*					
X_{2_2} *(Diploma)*	-2.000	4.770	-0.420	0.677	Not significant
X_{2_3} *(S1)*	0.230	3.260	0.070	0.944	Not significant
X_{2_4} *(S2)*	4.660	4.420	1.050	0.294	Not significant
X_{2_5} *(Others)*	5.850	8.130	0.720	0.473	Not significant
X_3 *(Employment)*					
X_{3_2} *(non-finance)*	3.720	3.830	0.970	0.334	Not significant
X_{3_3} *(Finance)*	-1.160	4.220	-0.280	0.784	Not significant
X_4 *(Annual income)*					
X_{4_2} *(300jt- 1,2 M)*	7.950	3.060	2.600	0.011	significant
X_{4_3} *(> 1,2 M)*	8.940	4.790	1.870	0.065	significant
X_5 *(Fintech)*	0.789	0.057	13.950	0.000	significant
X_6 *(Literacy)*	0.122	0.068	1.790	0.076	significant

The effect of loan distribution on the financial literacy index of accelerant platform users

The implementation of lending through the P2P Lending platform has a positive impact on public financial literacy. Based on a financial literacy survey in this study, the average index of user literacy is 33.67 percent. The financial literacy index is relatively the same for each group, but the highest proportion is the high literacy index group. Still and all, the financial inclusion index of users with a proportion of more than 80 percent that allows users to benefit from all financial services and products, is still low. The financial literacy index of accelerant users is higher than the public financial literacy index which was published in the 2016 SNLKI. It answers the research question as well as accepts the first hypothesis. The distribution of MSMEs loans through the P2P Lending fintech platform influences the financial literacy index of users.

The financial literacy index of the Indonesian people in 2016 is approximately 29.7 percent. It means that out of every 100 people, only about 30 people are categorized as well literate. The increase in the financial literacy index is one of the goals by the regulator towards the implementation of P2P Lending in Indonesia. Financial Services Authority (FSA) did not specifically announce the attained financial literacy index, but proclaim that the financial literacy index would affect financial management in the 2017 Revisit SNLKI. The financial management herein is the management of personal finances by individuals and MSMEs administered by managers and/or business owners.

The effect of loan distribution on the financial inclusion index of accelerant platform users

The survey filled out by 108 respondents reveals the following results: a number of respondents with an inclusion index of 60 percent is 90.8 percent while respondents with an inclusion index between 60 - 79 percent are 9.2 percent. The financial inclu-sion index of the users of the accelerant platform with an average of 69.87 percent has not fulfilled the regulators' expectation in which as of 2019, as stated in the 2017 Revisit SNLKI, the index of public financial inclusion index could attain 75 percent. Nevertheless, the magnitude of the financial inclusion index of users is higher than the 2016 SNLKI which is 67.82 percent. Thus, it answers the research question as well as confirms that the second hypothesis is accepted. The distribution of MSMEs loans through the P2P Lending fintech platform influences the financial inclusion index of users.

From the survey results, the users only benefit from a range of familiar financial services and products, such as conventional banking products and services. The high rate of internet penetration and mobile phones as well as easier access to funding as one of the investment tools offered by the P2P Lending fintech platform evidently unable to bring a significant impact on the increase in the financial inclusion of users. It is due to a range of factors, i.e. the financial literacy index, demographic factors, or the index of knowledge about fintech. Factors influencing the financial inclusion index of the accelerant platform users will be further analyzed (referring to the third, fourth, and fifth hypothesis testing).

The effects of users' characteristics / demographics on the financial inclusion index of accelerant platform users

These demographic characteristics/factors are commonly used in surveys and are considerably used to describe the profile of respondents. When compared to surveys by the Organization for Economic Co-operation and Development (OECD) and SNLKI, these factors are simpler and more concise. The simplification is used for easier questionnaire surveys while at the same time reducing risks of no responses when some questions about characteristics or profiles become too detailed and overwhelming.

The data analysis of the survey results as well as hypothesis testing is carried out using regression analysis. The hypothesis testing results show that the third hypothesis is accepted, in which demographic factors influence the financial inclusion index of users. Based on the results of regression analysis on the literacy survey, the characteristics of users who have a positive and significant influence on the inclusion index of users is income index, in which the greater the user income, the higher the inclusion index will be. Other characteristics, such as gender, education index, and occupation do not significantly influence the financial inclusion index. It corresponds with a study by Nugroho & Purwanti (2014) that the higher the index of income, the higher the probability of having bank accounts and depositing money in the formal financial institution. Further explanation reveals that income index increases, not all goes to consumption, but to other aspects, i.e., accessing financial services. A study by Ummah, Nuryartono, & Anggraeni (2015) reveals that equivalent incomes can broaden the opportunities of individuals in accessing the banking system.

The effect of financial literacy index on the financial inclusion index of accelerant platform users

Determination of the financial literacy index of the accelerant platform users is based on a literacy survey instrument developed by the OECD. This instrument measures the index of literacy of respondents with three components, namely financial knowledge (financial knowledge), financial behavior (financial behavior), and financial attitude (financial attitude). The estimation of the financial literacy index of accelerant platform users. Meanwhile, the measurement of the financial inclusion index focuses on product holding, product awareness, product choice and seeking alternatives to formal financial services. The results of the research and regression analysis revealed that the financial literacy index of users has a significant and positive influence on the financial inclusion index of users. This shows that the higher the financial knowledge, behavior, and attitudes of a person, the higher the use, utilization, and understanding of financial products and services. In other words, the fourth hypothesis is accepted; the financial literacy index affects the financial inclusion index of the P2P Lending fintech platform users.

Recently, a high financial literacy index poses as one of the main solutions to overcome financial problems. In fact, financial difficulties often arise due to financial management mistakes, instead of low income. Gunardi, Ridwan, & Sudarjah (2017) claim that financial literacy plays a big role in the financial management of individuals. A range of previous studies investigating the effect of financial literacy index on MSMEs financial management such as Muzdalifa, Rahma, & Novalia (2018) and Anggraini (2015) state that financial literacy index influences financial management in MSMEs.

The effect of fintech knowledge on the financial inclusion index of accelerant platform users

In this study, the financial literacy index of users about fintech is measured by the scoring method in survey questions regarding the use of market aggregators, risk and investment management and the knowledge they have about fintech products and services in general. Many respondents presumably have only partial knowledge of fintech, for example, specific to just one form of fintech. Almost all respondents have used fintech products as an alternative means of payment, but only a few are familiar with crowdfunding in the form of donations. The research findings and regression tests result reveal that the fintech literacy index has a significant and positive influence on the financial inclusion index. It answers the research question as well as confirms that the fifth hypothesis that is the fintech literacy index affects the financial inclusion index of the P2P Lending fintech platform.

The result of the analysis and the hypothesis testing show that there exists an increase in fintech literacy index which influences the financial inclusion index of accelerant users. This shows that the presence of the accelerant platform has a positive influence on the financial inclusion index of users. It is consistent with the goals of fintech implementation in Indonesia by regulators (FSA), even though the pre-planned goals have not been fulfilled yet. The financial education is one of the tools that able to resolve the problems related to the low index of financial literacy. According to Akmal & Saputra (2016), financial education is a long process that encourages individuals to have financial plans in the future as well as welfare that is consistent with their lifestyle. Good financial literacy is a desirable outcome for everyone. Thereby, it contributes to the financial decision making of individuals that result in welfare both in the present and future. It is supported by the previous research findings by Akmal & Saputra (2016) and Amaliyah & Witiastuti (2015) that confirm the significant effect of knowledge index on the financial literacy index.

The effect of non-performing loans on the accelerant platform intermediation efficiency

The magnitude of intermediation efficiency based on the data processing results with DEA is 0.9894, which is nearly close to 1, signifying efficiency. The discrepancy between the efficiency of intermediation on NPL and non-NPL loans is 0.04. It answers the research question as well as rejects the sixth hypothesis that is the efficiency index of lending intermediation through the P2P Lending platform is not affected by the NPL. The discrepancy of low intermediation efficiency is due to the low NPL in lending through the accelerant platform. However, the effect of NPL on intermediation efficiency can be further discussed more in-depth.

One of which is by comparing the research finding to the previous study by Santoso, Trinugroho, & Risfandy (2019). In their study investigated some factors that influence lending rates for MSMEs and NPLs on 3 fintech P2P Lending platforms in Indonesia during 2014–2018. In their study confirmed that interest rates, loan periods, gender, marital status, homeownership, education index, monthly income, and age are determinant factors of NPLs in MSMEs loan disbursements performed by the P2P Lending platform. Nonetheless, this study does not consider NPL as a variable that influences the efficiency of intermediation in MSMEs loans.

The results of hypothesis testing in this study correspond with previous research findings that the implementation of fintech in lending to MSMEs will increase the efficiency of intermediation. It is related to the use of information technology in reducing the possibility of asymmetric information about lending. The accelerant platform offers complete information from the borrowers, from the intended use of funds, business descriptions to financial statements. The loans that are successfully disbursed through this platform are almost entirely warranted by collateral, which subsequently increased the trust of lenders in providing extra funds. It makes an easier and faster funding process and affects the velocity of money in MSMEs lending through the P2P Lending platform.

However, intermediation efficiency approaching 1 does not necessarily mean good for business. When the intermediation efficiency reaches 1, the accelerant platform will reach a constant to return condition. This condition signifies that lending quality is nearly perfect which does not require any further development or innovation to increase efficiency. It certainly requires a prudential strategy in business development and / or business models that are currently adopted by the P2P Lending platform, particularly for accelerant.

The effect of loan periods on business efficiency of accelerant platforms

In this study, business efficiency is regarded as business revenue earned from each SME loan disbursement made by the accelerant platform. Operating income is not predicted from financial statements, but provisioning approach that is obtained from each loan distribution. The provisions earned from the accelerant platform are 0.25 percent of the sum amount of loans which are consistent with the loan period (monthly), and under the circumstance of some costs from collateral. Determination of loan to provision as an approach (proxy) for operating income correspond with applicable regulations outlined in POJK 77/2016, business activities carried out by the P2P Lending platform are limited to technology-based lending and borrowing services.

A period is a portion of time that is calculated from the starting date of loan disbursement (number of days or months) to the due date of algorithm-based payment (Santoso, Trinugroho, & Risfandy, 2019). The data processing results and data analysis show that the loan period has an effect on the operating revenues and business efficiency. The longer the loan period, the higher the index of business efficiency, as shown in the graph. The highest business efficiency is in the 24 month period and the lowest in 1 month. It answers the research question as well as confirms the seventh hypothesis; that the business efficiency index in lending through the P2P Lending platform is affected by the loan period. However, it is not consistent with operating income in which a long loan period is not necessarily an indication of the greater monthly income. The graph illustrates the fluctuations of loan period in the monthly average income, in which the largest value refers to the loan period between 1 and 18 months, and the lowest in the 15-month.

Beck (2007) states that underdeveloped financial systems can generally be identified through high overhead costs and large interest rate margins (between savings and loans), which indicate inefficiencies in the provision of financial services. Thereby, the accelerant platform can identify the optimal value of provision determinant and manifest strategies for lending distribution to SMEs in order to increase the index of business efficiency that is relatively low (the maximum in a 24-month loan period is 0.06) and has capacity for business enrichment. Among solutions is the use of technological innovation in determining credit ratings and interest rates for repayment of loans, so that it is no longer manually proceeded, automation in collecting funding and compiling optimal loan portfolios in channeling SME loans. The strategy determination in business growth plays a key role in the increase in the business efficiency of the accelerant platform and P2P Lending platform.

6. Conclusion

Based on data processing results as well as analysis and hypothesis testing which have been previously discussed, the accelerant platform only disburses productive loans to MSMEs and has good loan quality which is indicated by the magnitude of NPL 0.34 percent. The magnitude of the NPL that affects the efficiency of intermediation as of March 2019 was 0.9894. Whereas business efficiency which has a value of 0.53 has the potential for business enrichment. Business efficiency is determined by the loan period and high operating revenues per month do not always indicate high business efficiency. In the meantime, the average literacy and inclusion rate of lenders were 69.87 percent and 33.67 percent, respectively. The inclusion index did not fulfill the goal of FSA but has shown a growth from the 2016 SNLKI. It denotes the distribution of MSMEs loans through the P2P Lending platform has increased the financial literacy index and financial inclusion index of users. By using regression analysis, the research findings reveal that the index of income and the financial literacy index of fintech have a positive and significant effect on the financial inclusion index of users.

The author recognizes some limitations in this study, i.e. the scope of limitation and the specifications of the methodology. Due to the limited scope of the study, it does not specifically deliberate relationships among all variables with the characteristics/ demographics of accelerant platform users and inter-variables extensively. It will contribute to further research and improve knowledge and discourse about the distribution of MSMEs loans through a scheme of P2P Lending. This study only focused on one platform user, as consistent with a case study method. For further research, it looks forward to any possible future studies that consider survey and analysis of research variables on several fintech platforms simultaneously for comprehensive comparison and exhaustive analysis in the industry/business sector of banking and financial institutions.

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