Heterogenous Effect of Relationship Variables on Microfinance Lending: Evidence from Indonesia

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ABSTRACT

Microfinance and SMEs have significant roles as economic growth drivers. However, interest rate and credit availability for SMEs depend on various factors. This research tries to find the impact of having a relationship between the Microfinance Institution (MFI) and the borrowers as the deciding factor for interest rate charge and the percentage of approved loan applications. By utilizing cross-sectional survey data of 1001 ultra-microloan borrowers in Indonesia during 2018 from five MFIs, it is found that relationship lending, as proxied by duration of relationship between the MFI and the borrower, does not have significant influence on the interest rate setting but does have a significantly positive influence on credit availability, especially for borrowers with an at least five-year relationship duration. Meanwhile, having previous credit history with a bank actually increases interest rate significantly and reduces credit availability.

Keywords: Microfinance, Relationship Lending, Microfinance Institution

1. INTRODUCTION

Small and medium enterprises (SMEs) play a significant role in Indonesia. In 2013, SMEs accounted for 99.9% of the enterprises in Indonesia and 60.34% of GDP contribution, thus confirming SMEs' role as a driver of economic growth and job creation (Ayyagari, Demirguc-Kunt and Maksimovic, 2011). Furthermore, SMEs were the strong foundation for Indonesia's economy during the 1998 and 2008 crises. Due to this critical role, it would be beneficial for the government to ensure a supportive business environment for SMEs in Indonesia.

However, SMEs face some obstacles that limit their ability to grow, such as financing constraint (Wang, 2016). Investing in SMEs means higher monitoring cost due to frequent issues of unprofessionalism where SMEs' business cash flow is jointly mixed with personal cash flow of the owner. Second, SMEs only need a small loan compared to larger business. Therefore, lenders intending to finance SMEs will need to split their loanable funds into smaller amounts and at the same time disburse those loans to a high quantity of borrowers. Consequently, the high number of the borrowers means higher monitoring cost for the lenders, which leads to inefficiency problem (Diamond, 1984).

Third, lenders face a more significant adverse selection problem due to asymmetric information. They face high difficulties in assessing the risk of the SMEs due to the lack of formal documents. Moreover, general information of the SMEs such as the business cash flow and profitability are not sufficient when the lender tends to finance SMEs; they also need to extract soft information such as the physical appearance, marital status and the number of children of the owner that may affect their credit risk (Berger and Udell, 1995). To compensate for this problem, lenders of SMEs tend to charge high interest rates and might limit credit availability (Petersen and Rajan, 1994). Another way to compensate for the asymmetric information problem is done by credit rationing (Stiglitz and Weiss, 1981). However, limited credit availability might lead to the death of SME lending market (Akerlof, 1970).

As a solution, the lender can use a lending technology named relationship lending (Berger and Udell, 2002). Relationship lending helps the lender to extract soft information due to intense interaction between the lenders and borrowers. This relationship helps the lender have a better understanding of the borrower for both the business and individual aspects. Lenders can utilize the relationship they have with their borrowers as insurance for ensuring borrower quality

and also increase their access to monitor them. As the impact, some theoretical research found stronger relationship tends to decrease the interest rate (Boot and Thakor, 1994) and increase the credit availability for the borrowers (Petersen and Rajan, 1994).

However, building the relationship is sometimes costly, especially for banks. To compensate for the cost, banks utilize their relationship with their existing customer as a bargaining power to get a higher interest rate, which is known as informational rents (Sharpe, 1990; Rajan, 1992). In addition, the bank tends to tolerate higher risk when there is a close relationship between the bank and the borrower (Jiménez and Saurina, 2004). Such evidence shows the side effect of having a relationship lending for the bank. Within the limited ability of the banks to build relationship with SMEs, Microfinance Institutions (MFIs) appear to fill the space. First, their social motivation encourages them to maintain their relationship with borrowers (Mersland, Nyarko and Szafarz, 2019). Previous research provided evidence that having a close relationship with borrower will secure their investment as long as they prevent aggressive loan disbursement (Donou-Adonsou and Sylwester, 2017; Quidt, Fetzer and Ghatak, 2016). In addition, relationship building tends to create social capital (such as neighborhood and professional relationship) that becomes an essential factor in encouraging loan repayment (Quidt, Fetzer and Ghatak, 2016).

In 2017, the Ultra-Microloans (UMi) program was introduced to fulfill the financing needs of micro-enterprises in Indonesia. Instead of disbursing the loan funds through banks, the program collaborates with MFI to finance SMEs. As opposed to other schemes of government-initiated loans such as the Kredit Usaha Rakyat aimed to serve SMEs, the UMi program explicitly addresses micro-enterprises with a maximum loan amount of 10 million rupiahs. This research aims to examine impact of the relationship between lender and borrower that involve in UMi program on the interest rate and credit availability. The research used cross-sectional data from 1002 UMi borrowers across 13 provinces in Indonesia. The literature review and empirical approach description are in Section II. Section III describes the model and methodology, while Section IV examines the results and discussion. Finally, Section V concludes the result.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Microfinance Institution Roles, Interest Rate Setting and Credit Availability

Procurement as business management function that, after Grameen Bank's success in 2006, microfinance services have been vastly developing in the world.

Microfinance is believed to be a solution for small-sized customers with limited access to the banks (Aigbokhan and Asemota, 2011). There is much evidence of microfinance's impact for reducing poverty and accelerating economic growth. Microfinance is able to reduce poverty through risk management, asset building, increased income-generating capabilities, improved life quality, and enhanced support to the SMEs.

Enhanced support to SMEs is given by microfinance by financing informal economic activities. Formal financial institutions such as banks face difficulties for financing the informal economic activities due to low market demand of the informal economy and low return. However, given the size of the loans disbursed, this issue is not as threatening to MFIs as it is for banks. Therefore, MFIs have an upper hand to support those kinds informal economic activities (Khandker, 2005). There is evidence that MFIs have helped SMEs to make their businesses became sustainable (Yahaya, and Osemene, 2011). However, there are also regional disparities of microfinance practices. Rural areas are shown to be in high necessity of specific types of productive loans while urban areas have higher needs for expanded access for all kinds of microloans. For example, according to Khandker (2005), productive loans are more prioritized in the rural areas. On the other hand, simply having access to any kind of microloans is deemed to be more important in the urban area. The core objectives of microfinance between countries also differ, where Asian countries tend to focus on poverty alleviation while Latin American countries tend to target SMEs development. As a result, the outcomes of microfinance on SMEs have varied across countries (Weiss and Montgomery, 2005).

In practice, MFIs suffer from asymmetric information problems, which translate into reduced efficiency for MFIs to fully maximize their role on economic growth. Targeting remains a persistent issue (Akinlabi, Kehinde and Jegede, 2011) and the asymmetric information problem remains unsolved (Marr, 2003). Compensation for the asymmetric information issue is then done through high interest rate setting. However, charging high interest rates will make the loans not be entirely suitable to the needs of their borrowers. Loans are typically offered with high interest rates and limited credit availability, along with unequal loan disbursement on specific sector such as agriculture [23]. It is suggested that the government might need to control the microfinance lending rate to ensure affordability (Yahaya and Osemene, 2011). Factors affecting interest rate setting are shown be dependent on geographic and cultural factors. Some arguments justify that the borrower's needs for having access to loans are higher than their needs for having low interest rate. It is also argued that low cost of fund might leads to crowding out of the SME households because the non-

SME households might also by attracted to obtaining microloans, which causes limited credit availability (Lashley, 2004).

2.2. *Estimating Impact of Microfinance Relationship on Interest Rate and Credit Availability*

There are relatively limited studies analyzing the benefits of having relationship with MFIs for the borrowers. On economic wealth, it is found that borrowers who already have relationship with the MFI for minimum of one year with newly registered borrowers have a benefit (Hiatt and Woodworth, 2006). Improved economic wellbeing of the borrowers is also shown to be influenced not only by education level of the borrower and characteristics of the loans but also the borrower's prior history with the MFI (Aigbokhan, and Asemota, 2011). Even though those findings showed improved economic wellbeing overall, we need to investigate whether it is because the borrowers have the privilege of low interest rate and higher credit availability, which reduce the cost of borrowing and help them to increase their economic performance.

The main research question in this paper is therefore the effect of having relationship with MFIs on the lending characteristics given, which are interest rates and credit availability. Therefore, the proxy for relationship lending itself needs to be defined first. In this paper, we use two proxies for the relationship variables. However, there are difficulties for choosing the appropriate microfinance indicators and maintaining robust estimation (Imai et al., 2012). The first proxy is the duration of the relationship between the borrower and the lender. The duration of the relationship is measured using dummy variables that take the value of one if the borrower has interacted with the MFI for certain periods. Borrowers who have a long-term relationship duration with the MFI suggest that they are qualified for receiving loan (Diamond, 1991) as the lender could get better understanding and knowledge about the quality of the borrower, which then decreases the asymmetric information issue. This condition leads to a lower risk level and lower cost of fund for borrowers (López-Espinosa, Mayordomo and Moreno, 2017). In addition to the decreasing interest rate, longer duration also leads to more credit availability. Dynamic information from relationship lending between the borrower and lender help lender to do monitoring overtime (Agarwal et al., 2018).

Second, this research uses relationship over multiple institutions as the proxy for relationship variables. In this case, the bank relationship is used as the proxy since a bank can extract substantial information when it does close monitoring (Diamond, 1984). A stronger relationship with the bank might provide lower interest rate because there are indirect guarantees regarding the borrower's quality (Slovin, Sushka and Polonchek, 1993). Following those proxies, four main hypotheses are studied:

H1: Longer relationship between lender and borrower tends to lower interest rate since it provides more information for the lender and builds trustworthiness.

H2: Longer relationship between lender and borrower tends to increase the credit availability since it decreases the borrower risk through better access to assess borrower.

H3: Stronger relationship between borrower and bank tends to lower the interest rate since it provides indirect insurances that the borrower is qualified.

H4: Stronger relationship between borrower and bank tends to increase credit availability since it gives the lender indirect insurance for the borrower quality.

In addition to those relationship variable proxies, we also include business age of the SMEs as the control for relationship variables. Longer business duration tends to provide a better experience for the business owner and ensure better quality than younger business (Petersen and Rajan, 1994). This condition may affect the relationship aspect between microfinance institution and SMEs. Therefore, we include business age in every hypothesis tested in this research.

3. RESEARCH METHODS

The data used are the Audit Report of the State Audit This research uses cross-sectional survey data of 1001 UMi lenders in the year 2018. The survey was conducted among five MFIs scattered throughout 13 regions in Indonesia. The majority of the variables collected, such as personal expenses, total individual assets owned, total business asset value, total sales, and profit, are expressed in ordinal variables. Ordinal variables are due to difficulty to obtain the exact number of those variables from the SMEs. Table I shows the descriptive statistic of our variables.

Table 1. Descriptive Statistics.

Variable	Obs	Mean	SD	Min	Median	Max
Dependent Variables						
Interest rate charged	1001	25.26	17.09	0.00	20.00	98.00
Percentage of loan approved	1001	96.07	13.80	1.00	100.00	100.00
Relationship Characteristics						
Business age (in months)	1001	11.88	8.67	0.00	10.00	50.00
Dummy relationship 2–5 years	1001	0.40	0.49	0.00	0.00	1.00
Dummy relationship >5 years	1001	0.32	0.47	0.00	0.00	1.00
Dummy have loan with bank	1001	0.13	0.34	0.00	0.00	1.00
Individual Characteristics						
Age	1001	44.06	10.16	20.00	44.00	78.00
Dummy women	1001	0.57	0.50	0.00	1.00	1.00
Dummy head of family	1001	0.47	0.50	0.00	0.00	1.00
Education level	1001	3.26	1.16	1.00	3.00	7.00
Average individual expense	1001	1.58	0.32	1.00	1.50	4.00
Total individual asset owned	1001	5.09	1.24	0.00	5.00	8.00
Business Characteristics						
Number of employees	1001	0.88	1.63	0.00	0.00	16.00
Total sales	1001	2.64	0.96	1.00	2.00	5.00
Total business asset	1001	2.19	1.55	1.00	2.00	6.00
Profit	1001	2.52	0.90	1.00	2.00	6.00
Loan Characteristics						
Loan term (months)	1001	13.86	8.70	1.50	12.00	80.00
Loan size	1001	15.40	0.90	12.61	15.42	18.32

We intend to use previous research to identify the relationship variables that affect the cost of fund for small business borrowers, as proxied by the interest rate charged to the borrower (Petersen and Rajan, 1994) and percentage of loan application approved as the proxy of credit availability (Ferri, Murro and Pini, 2018). This research purpose is therefore to confirm the negative effect of the relationship on interest rate and positive effect of the relationship on credit availability. The dependent variables are the percentage of credit approved as the proxy for credit availability and interest rate as the proxy for borrower cost of fund. Based on previous research, microfinance lending rate is influenced by loan size, funding cost, and MFI efficiency level, while the impact of competition remains mixed (Cotler and Almazan, 2013). In this model, however, we do not account for competition variable. Meanwhile, there are three proxies for the relationship characteristic as independent variable" dummy variable for 2–5-year relationship, a dummy variable for having more than five-year relationship and a dummy variable for having credit history with a bank. The basic determinant model for loan interest rate is the following:

$$\text{Interest rate} = \beta 0 + \beta 1 \text{ Relationship characteristics} + \theta 1 \text{ Economy-wide interest rate variables} + \theta 2 \text{ Firm characteristics} + \theta 3 \text{ Loan characteristics} + \varepsilon \qquad \square\square\square$$

For the credit availability model, we exclude the loan characteristics as it could not serve the purpose of being a control variable. Therefore, the basic model provided for a credit availability is the following:

Percentage of loan approved = β0 + β1 Relationship characteristics + θ1 Economy-wide interest rate variables + θ2 Firm characteristics + ε

In addition to the relationship characteristics variables, we use some control variables to provide a robust model. First, the paper ignores the economy-wide interest rate as the control for the market cost of capital since the data are cross-sectional. Using the economy-wide interest rate would lead to a no-variance problem in regression process because the data have the same value across the observation, therefore justifying its exclusion. For the firm characteristics, this research uses two categories as proxies. The first category is individual characteristic, representing the borrower's wealth and individual demographic factors such as age, gender, head of the family status, education level, average individual expense and total individual assets owned (Islam, Nguyen and Smyth, 2015). Gender and head of family status are dummy variables which take the value of one if the borrower is a woman and head of the family, respectively. The education level is an ordinal variable where higher education means higher

score for the variable. In addition, average expense is an average of all personal monthly expenses, which are put in ordinal variables. Finally, total individual assets owned is total of dummy asset variables, which take the value of one if the borrower has a specific asset. The assets considering in the questionnaire are farm, cattle, car, motorcycle, bicycle, home, jewelry, and electronic devices.

The second category used is the business characteristic of the borrowers such as having several employees, total sales, total business assets, and total profit (Agier & Szafarz, 2013). Total business assets, total sales, and total profit are ordinal variables, which have a higher value if the borrower's business has more asset, sales, and profit, respectively. Finally, the research also controls for loan characteristics such as loan term and size. Loan size is the log function of the total loan amount.

4. RESULTS AND DISCUSSION

As stated above, we explore the impact of relationship variables on interest rate and credit availability with regression analysis using our survey data. We use several regression methods that are suitable to the data in order to provide robust regression results.

Table 2. Interest Rate Regression Result.

Dependent Variable:	(1)	(2)	(3)	(4)
Interest Rate	OLS	OLS	OLS	OLS
Relationship Characteristics				
Business age (in months) (a)	−0.107*	−0.107*	−0.111*	−0.076
	(0.061)	(0.060)	(0.061)	(0.067)
Dummy relationship 2–5 years (b)	−0.489		0.379	0.441
	(1.124)		(1.475)	(1.476)
Dummy relationship >5 years (c)		0.796	1.082	1.197
		(1.030)	(1.339)	(1.340)
Dummy has a loan from a bank (d)			4.062***	7.393***
			(1.435)	(2.356)
Interaction (a) × (d)				−0.262**
				(0.116)
Individual Characteristics				
Age	−0.030	−0.033	−0.030	−0.030
	(0.051)	(0.051)	(0.051)	(0.051)

Dummy women	3.956**	3.935**	3.859*	4.001**
	(1.975)	(1.978)	(1.986)	(1.985)
Dummy head of family	4.682**	4.675**	4.560**	4.582**
	(1.954)	(1.954)	(1.970)	(1.966)
Education level	−0.295	−0.318	−0.306	−0.302
	(0.490)	(0.490)	(0.486)	(0.483)
Average individual expense	−2.860*	−2.897*	−2.782	−2.731
	(1.731)	(1.732)	(1.737)	(1.740)
Total individual asset owned	0.205	0.188	0.105	0.074
	(0.414)	(0.414)	(0.417)	(0.418)
Business Characteristics				
Number of employees	0.956***	0.959***	0.921***	0.908**
	(0.356)	(0.355)	(0.356)	(0.356)
Total sales	0.087	0.038	0.209	0.263
	(0.632)	(0.641)	(0.639)	(0.637)
Total business asset	0.422	0.450	0.405	0.419
	(0.339)	(0.341)	(0.342)	(0.343)
Profit	−0.427	−0.433	−0.550	−0.584
	(0.670)	(0.667)	(0.664)	(0.663)
Loan Characteristics				
Loan term (in months)	0.640***	0.644***	0.638***	0.635***
	(0.127)	(0.127)	(0.127)	(0.127)
Loan Size	2.409**	2.366**	2.440**	2.446**
	(1.057)	(1.065)	(1.067)	(1.065)
Constant	−12.153	−11.317	−14.256	−15.194
	(15.092)	(15.272)	(15.317)	(15.307)
Observations	1,001	1,001	1,001	1,001
R-squared	0.290	0.291	0.295	0.297
Regional Fixed Effects	Yes	Yes	Yes	Yes
MFI Fixed Effects	Yes	Yes	Yes	Yes

4.1. Interest Rate Model

In the first model, the research analyzes the impact of relationship variables on interest rate. The regression uses Ordinary Least Square (OLS) method with some fixed effect variables such as regional and microfinance institution. The dependent variable is the interest rate, which is measured in percentage. Table II presents the regression results. We combine both relationship variable proxies to test the hypothesis. We regress the interest rate on each of dummy of relationship length variables separately in Columns (1) and (2), excluding business characteristics which are always used as control. In Column (3), we include all relationship variables in one model and use them as independent variables for the interest rate. We examine the interaction between business age and relationship variable in Column (4). However, we only include the relationship variable that has a significant impact based

on Column (3), i.e. the dummy variable of having relationship with the bank.

Based on the regression result in Table II, we examine the heterogenous impact of the relationship variables. First, the variable of business age has adverse impact on interest rate. The impact is statistically significant at 10% in all models except in Column (4) where we interact it with a dummy of bank relationship. In Column (3), the increase of business age for one-month tends to decrease the interest rate by 0.11%. It implies that an older firm has the privilege of a lower interest rate, as a result of having good reputation among the lenders, which decrease the risk and cost of fund for borrowers (Petersen & Rajan, 1994).

Second, neither relationship length variables is significant in Column (1), (2) or (3). The result shows that the relationship variables do not affect the interest rate directly. The result, then, rejects our first hypothesis that more extended interaction with the MFI tends to decrease the cost of fund charged to the borrower in exchange for more information from the relationship between borrower and lender. There are several explanations about this result. One of them is the availability of publicly accessible information regarding the borrower. By having publicly accessible information, having the relationship might not yield additional information, thus explaining the insignificant impact. Another explanation is the preferences of the borrower to get more credit

availability instead of reduced cost of fund as the gain from having relationship lending. Lastly, a possible reason is that the market could not force the MFI to give the benefits of relationship through reduced interest rate (Petersen and Rajan, 1994).

We also test the effect of bank relationship on interest rate and find that the relationship is positive in Column (3). The microfinance institution tends to charges a higher interest rate by 4.06% to borrowers who currently have a loan with a bank compared to those who do not. The result rejects our second hypothesis, which states that a relationship with the bank tends to decrease the interest rate since the bank as better intermediary has already screened the borrower.

The possible explanation for this condition is the relationship with the bank do not provide additional information for the microfinance (Petersen and Rajan, 1994). In contrast, it tends to increase the competition, which in this condition is bank monopoly power. Past research shows that relationship with bank tends to increase the bank bargaining power, which leads to higher interest rates (Sharpe, 1990; Rajan, 1992). This condition means a higher risk for the MFI to finance borrowers who have a relationship with the bank.

In addition, we interact the dummy of bank relationship with business age variable to find the joint-effect between both variables. Based on Column (4), the microfinance institution charges a 7.39% higher rate to borrowers who have a loan with the bank. However, the positive impact of having a one-month business age tends to decrease by 0.26%. The result suggests that the borrower who has reputation through older business age tends to get lower interest rate even though they have a loan with a bank, which leads to a higher interest rate.

4.2. Credit Availability Model

After we examine the impact of relationship variables on interest rate, we regress the percentage of approved loan application as the proxy for credit availability with the relationship variables. In this case, we use the same independent variables with the previous interest rate model regression. However, we also add Tobit regression method as alternative method because the dependent variable (percentage of approved loan application) has an upper limit, i.e. 100%. This method is needed to avoid overestimated issue if we were to rely on OLS only, as OLS method can predict the dependent variable value to higher than 100%.

Table III provides the regression result of the percentage of loan approved on relationship variables and some control variables with some combinations. Column (1) shows the regression result of the percentage of loan approved on all of the relationship variables, namely business age, a dummy of relationship 2–5 years, a dummy of relationship >5 years and dummy relationship with the bank. In Column (2), we multiply the business age with a dummy of relationship length and dummy relationship with the bank. Next, we repeat the model in Columns (1) and (2) in Columns (3) and (4) with the Tobit regression method.

Table 3. Credit Availability Regression Result.

Dependent Variable:	(1)	(2)	(3)	(4)
%of loan approved	OLS	OLS	Tobit	Tobit
Relationship Characteristics				
Business age (a)	0.091	0.101	0.890*	1.192*
	(0.056)	(0.074)	(0.499)	(0.679)
Dummy relationship 2–5 years (b)	0.597	0.632	0.008	0.511
	(1.402)	(1.412)	(11.581)	(11.615)
Dummy relationship >5 years ©	2.926**	3.623**	24.872**	37.705**
	(1.297)	(1.599)	(12.076)	(16.854)
Dummy has a loan from a bank (d)	−4.795**	−5.720**	−32.015***	−29.303**
	(2.200)	(2.910)	(10.104)	(13.556)
Interaction (a) x (d)		0.076		−0.185
		(0.181)		(0.933)
Interaction (a) x (c)		−0.056		−0.985
		(0.075)		(0.877)
Individual Characteristics				
Age	−0.028	−0.028	0.000	−0.009
	(0.046)	(0.046)	(0.379)	(0.381)
Dummy women	−2.416	−2.432	−14.779	−14.897
	(1.835)	(1.845)	(12.428)	(12.410)
Dummy head of family	−1.253	−1.244	−6.805	−7.213
	(1.645)	(1.660)	(11.730)	(11.718)
Education level	−0.385	−0.385	−2.481	−2.562
	(0.549)	(0.550)	(3.600)	(3.607)
Average individual expense	−0.092	−0.177	−3.859	−4.544
	(1.799)	(1.851)	(12.038)	(12.166)
Total individual asset owned	−0.642*	−0.638*	−6.421**	−6.376**
	(0.343)	(0.343)	(3.098)	(3.089)
Business Characteristics				
Num of employees	0.093	0.097	0.978	0.978
	(0.310)	(0.309)	(2.642)	(2.624)
Total sales	0.340	0.322	3.088	2.952
	(0.743)	(0.746)	(5.166)	(5.201)
Total business asset	−0.247	−0.263	0.871	0.772

	(0.407)	(0.406)	(2.752)	(2.760)
Profit	−0.621	−0.575	−5.957	−5.469
	(0.799)	(0.801)	(5.118)	(5.092)
Constant	99.706***	99.772***	200.941***	198.499***
	(4.047)	(4.097)	(32.888)	(33.304)
Observations	1,001	1,001	1,001	1,001
R-squared/ Pseudo R-Squared	0.075	0.075	0.084	0.084
Regional Fixed Effects	Yes	Yes	Yes	Yes
MFI Fixed Effects	Yes	Yes	Yes	Yes

In Table II, we can examine the effect of relationship variables on the percentage of loan approved. The effect is mixed. First, business age has a positive impact on credit availability. When we use OLS, the result is not significant, as shown in Columns (1) and (2). However, Tobit regression shows that the business age is statistically significant at the 10% level. The results are shown in Columns (3) and (4). In Column (3), the increase of business age for one-month tends to increase the percentage of loan approved by 0.89%. The result shows that older firms tend to get more credit availability, confirming that older firms mostly have better reputation among the lenders, which increase the MFI trust (Petersen and Rajan, 1994).

Second, both relationship length dummy variables have a positive effect on the percentage of loan approved. However, the significance level between the variables is different. The dummy for having more than five years is significant at 5% level while the dummy for 2–5 years relationship is not. In Column (3), the result shows that borrowers who have a relationship for more than five years with the MFI have a 24.87% higher loan approved than those who do not. Therefore, it confirms the third hypothesis that longer relationship duration tends to increase credit availability. The relationship between the borrower and lender make the microfinance institution able to reduce the asymmetric information from the borrower. Since the dummy for relationship 2–5 years is not significant, the long-term relationship needs to be maintained to provide better information for microfinance institution and then more credit availability (Petersen and Rajan, 1994).

We also test the effect of bank relationship on the percentage of loan approved and find that the relationship is negative in Column (3). MFI tends to provide less credit availability for the borrower who has a loan in the bank. The result shows that the borrower who has a loan on the bank have 24.87% higher loan approved than those who do not. The result rejects our fourth hypothesis, which states that relationship with bank tend to increase credit availability since the bank as better intermediaries have already screened the borrower.

The result confirms our discussion in the previous interest rate model, which states that the relationship

with the bank does not provide additional information for the microfinance (Petersen and Rajan, 1994). In contrast, it tends to increase the competitor, which in this condition is bank monopoly power. This condition means a higher risk for the microfinance institution to finance the borrower who has a relationship with the bank. In Column (4), we try to multiply the business age variable with both relationship variables to find whether there is an intersection between the business reputation and relationship. However, we do not find a significant effect on the intersection variables. Therefore, we assume that the relationship and reputation have different source effect in credit availability for the borrower.

5. CONCLUSION AND IMPLICATIONS

We began our empirical investigation by defining two relationship proxies, which are commonly used as relationship measurements, in five Indonesian microfinance institutions. We analyze the effects of those relationship variables on the cost of fund that borrowers are charged and credit availability. There are several findings in which our research can contribute to the existing literature. First, there are two different effects from those independent variables. Relationship length tends to decrease the cost of fund charged to the borrower and increase credit availability. This result confirms our hypothesis about relationship length effect on credit availability, but not on interest rate. The significant effect of relationship on credit availability confirms that the relationship leads to more information for the lender. Therefore, this condition is able to decrease borrower risk.

Meanwhile, the dummy of having a relationship with the bank has the opposite effect. The possible explanation for this condition is that the relationship with the bank leads to more information for microfinance institution competitor, i.e. the bank. The bank can then utilize this information to keep the borrower tied to the bank and charge a higher interest rate. This condition increases the risk faced by the MFI to finance that borrower.

Another conclusion provided is the preference of relationship lending benefit. The relationship leads to

more credit availability instead of a lower interest rate. This result confirms previous research that also suggests credit availability as the benefit for the relationship between borrower and lender.

Last, we also find that the borrower needs to maintain a long-term relationship in order to get more credit availability. This research contributes to the microfinance literature since few studies focus on MFI lending relationship with the borrower. This research can also support the regulator to create a better environment for microfinance lending that is still relatively low-regulated. However, this research has some limitations. The ordinal variables used as the independent variables decrease the amount of variance. Further research is encouraged to use enhanced data.

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