

What Makes Small Industries Apply for Loan?

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Banking sectors have allocated funds for micro and small-scale enterprises' financing needs. However, the absorption of this fund is still considered low, particularly among the micro- and small-scale processing industries. The present study hence applied the multinomial logistic regression to understand the small industries' loan decisions. The data were obtained from the 2019 Micro and Small Industry Survey and Financial Institution Statistics. It was found that income and profit did not exhibit a significant effect in both models and regions. However, the interest rate was found to have a positive effect in both models and regions, contradicting the Loanable Fund Theory. Collateral exhibited a positive effect in each region only in the first model. Meanwhile, other variables like age, financial record, business course, cooperative membership, business assistance (i.e., cooperative, non-cooperative, and subsidized credit), internet access, and partnership exhibited different effects on small industries' loan decisions in each model and region.

Keywords: Small Industry, Multinomial logistic regression; bank loan, non-bank loan

JEL classification: C50, D00, G00, L00

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1. Introduction

In 2019, the banking sector allocated Rp. 1,111.34 trillion for micro, small, and medium enterprises (MSME) financing needs. Of that budget, approximately 72.04% (Rp800.64 trillion) was absorbed. The allocation represents 19.72% of the total bank loan (i.e., Rp5,633.40 trillion), while the absorption represents 14.21% of the total available bank loan (BI, 2020b). On the one side, approximately 74% of the total MSMEs have not obtained access to funding in 2019 (PwC, 2020). This condition shows that many MSMEs have not enjoyed benefit from the allocated bank credit, especially the micro and small enterprises that dominate 99.90% of the business sector (Kemenkopukm, 2019b).

As shown in figure 1, the trading sector is the largest sector (39.59%) that needs bank financing, followed by the processing industry (31.43%). Yet, when comparing the number of business units/ business sector, the processing industry turns

out to need financing more than the trading sector. This is due to the percentage of 9.63% in the processing industry has already contributed to the number of businesses that need financing by 31.43%. Meanwhile, the largest sector, i.e., the trading sector, represents of businesses that need financing, but the percentage of the number of business units in the trading sector is almost three times higher than the number of business units in the processing industry, which is 26.78%.

The credit position of trading sectors is also the highest among other sectors, i.e., 37.94% of the total credit, followed by the processing industry by 22.86%. In terms of budget absorption, the processing industry exhibits the lowest absorption, i.e., only 9.13%, far lower than the trading industry, which absorbs 27.26% of the budget. This condition shows that the processing industry has not been able to optimally absorb the available financing budget despite many business actors in this sector needing financing.

This condition triggers our attention to reveal the underlying reasons why micro and small-scale processing industries do not access the financing service.

Statistics Indonesia's Micro and Small Industry Survey reveals that in 2019, only 12.32% of MSEs had accessed the financing, while the rest 87.68% did not. The survey reports that 6.13% MSEs took financing from bank sources, while the other 6.20% took financing from non-bank sources (Figure 3). Meanwhile, 22.46% of MSEs that do not apply for financing state that they

need financing assistance as they face financial difficulties. In terms of business scale, small-scale industries exhibited a higher percentage (28.5%) than micro-scale industries (23.1%) regarding the need for financing. Various factors are reported to affect the MSEs' bank loan decisions. The survey showed that most of MSEs were not interested (67.44%), did not have collateral (10.39%), perceived a high-interest rate (9.64%), complex requirement (7.42%), did not know the procedure (4.13%), and had been rejected (0.98%) (BPS, 2020:50).

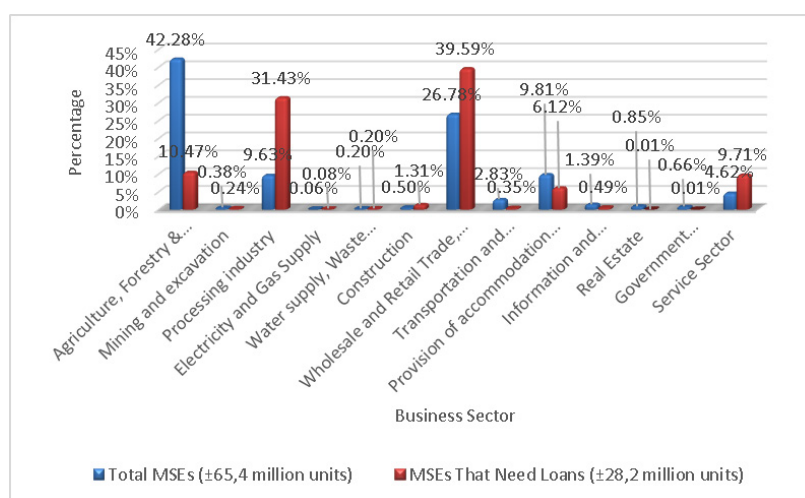


Figure 1. No. of MSEs with financing needs in terms of business sector

Source : (BI, 2020a; Kemenkopukm, 2019b, 2019a)

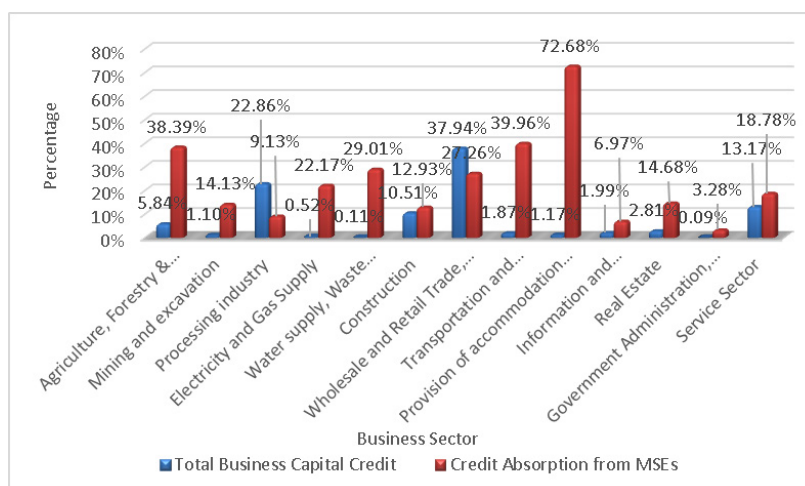


Figure 2. Total of MSEs' financing and absorption in terms of Business Sector in 2019

Source : (BI, 2020b)

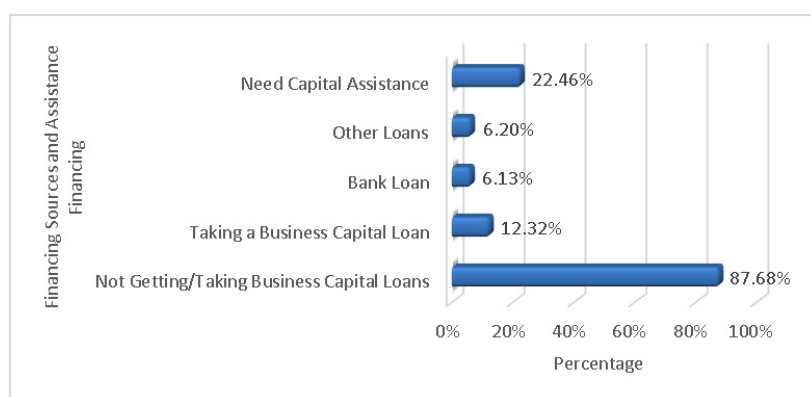


Figure 3. No. of MSEs that applied for loan in terms of Loan Source
Source : (BPS, 2020)

While capital serves as the main hindrance faced by MSEs (BPS, 2020:50), their reason not to apply for a bank loan is a phenomenon that needs further investigation. Some of the reasons may include the business's internal factors, including low income or profit, in addition to other internal factors. MSEs may lack understanding of the benefit of external financing since they never receive any business course. Another possible reason is that they never receive business assistance such as loans, material provision, and marketing assistance, making it difficult to develop the business. The absence of subsidized loans may also account for MSEs' loan turndown. In 2019, the realized microcredit (e.g., government's KUR program) was Rp.140.12 trillion, and only $\pm 8\%$ of that amount was absorbed by the processing industry (Kemenko Perekonomian, 2019b). Limited information on financing services and financial literacy, in addition to poor business networking with the bigger scale business, can possibly account for the MSEs' loan turndown. Statistics Indonesia report that only 8.28% of the total MSEs in Indonesia have a business partnership (BPS, 2020:45).

Several previous studies provide an overview and input to the authors based on the studies discussed from each journal. Many previous studies used samples in the agricultural sector, such as in the study of Moahid & Maharjan (2020), Chandio et al. (2017), and Sartika & Karyani (2018) who use farmer household respondents in analyzing credit demand. Most studies also tend

to analyze credit demand in the business sector in general, as conducted by Parida & Pradhan (2020) and Umiyati et al. (2019) analyzing micro, small and medium enterprises in taking credit, Xu et al. (2020) who analyzed informal businesses in accessing formal credit, Magboul & Hassan (2016) and Messah & Wangai (2011) who analyzed micro and small businesses in accessing formal microcredit and business credit. The tendency of the analytical method used in several countries to see the decision to take credit is the logit regression method, as done by Umiyati et al. (2019) and Sartika & Karyani (2018) in Indonesia and study conducted by Messah & Wangai (2011) and Ssonko & Nakayaga (2014) in Kenya and Uganda. Meanwhile, another method that is also used in analyzing the decision to take credit is the probit regression analysis method. Some researchers who use this method include Moahid & Maharjan (2020), Parida & Pradhan (2020), Xu et al. (2020), Chandio et al. (2017), Magboul & Hassan (2016), Ajagbe (2012), and Ssonko & Nakayaga (2014).

The determinants of credit demand have been widely used by previous researchers. In general, the most decisive factor in requesting credit is the economic factor. Income variable is one of the economic factors. These variables have been widely used by previous researchers to see their influence in influencing credit decisions, such as Moahid & Maharjan (2020), Rahayu (2019), Hardana et al. (2019), Chandio et al. (2017), Magboul & Hassan (2016), Ajagbe (2012),

and Messah & Wangai (2011). Various results have also been obtained empirically, both of which have a significant positive effect, significant negative or insignificant effect on the decision to take credit. Another economic factor that is no less important in determining the decision to borrow credit by a business is the business profit variable. Kepramareni et al. (2017) used these variables to see the decisions of micro, small and medium enterprises in taking bank credit. Various other variables that can affect the level of income have also been used to analyze decisions in taking credit, such as the business size variable used by Mulandi (2013), Oke et al. (2019), and Sujarwo (2017) and the length of business variable used by Mulandi (2013), Oke et al. (2019), Sujarwo (2017), Hardana et al. (2019), and Umiyati et al. (2019). Previous studies have also used diverse socio-demographic factors to look at different preferences. The socio-demographic variable that is often used is the age of the entrepreneur, as in study Ajagbe (2012), Chandio et al. (2017), Magboul & Hassan (2016), Messah & Wangai (2011), Mkandawire & Duan (2016), Parida & Pradhan (2020), Siswanto et al. (2019), Umiyati et al. (2019), and Xu et al. (2020). The education level variable is also often used, as in research Ajagbe (2012), Chandio et al. (2017), Magboul & Hassan (2016), Moahid & Maharjan (2020), Sartika & Karyani (2018), Umiyati et al. (2019), and Xu et al. (2020). Various other variables have also been used as determinants of credit demand, including financial records variables by Magboul & Hassan (2016), and Mulandi (2013), information access variables by Mulandi (2013) and Zabri et al. (2021), social group membership variables and associations by Magboul & Hassan (2016), Moahid & Maharjan (2020), and Ssonko & Nakayaga (2014), and business partnership fabrication variables by Siswanto et al. (2019).

The Indonesian government has placed small-scale industry as an important part of the national industrial development through its policy on financing support (PP No. 14 on RIPIN 2015-2035, 2015). The present study focuses on the small-scale industry with financing needs because, there is no previous research that takes samples in the processing industry sector and

in terms of business scale, the number of small-scale enterprises that face financing difficulties was higher than micro-scale industries. Figure 3 shows that there are several financing sources for MSEs. Therefore, this study categorized these sources into three groups: *applying for a bank loan*, *applying for a non-bank loan*, and *not applying for both sources*. The factors that influence the demand for business capital loans will also be regrouped into economic characteristics (i.e., business income, interest rate, business profit, and collateral), entrepreneurs' characteristic (age), business characteristics (financial record), HR development characteristic (business training), group characteristic (cooperative membership), assistance characteristic (cooperative assistance, non-cooperative assistance, subsidized loan), information source characteristic (i.e., internet access), and partnership characteristic (business partnerships) on small industry decisions take a business loan. This study primarily aims to describe and analyze the simultaneous and partial effect of economic characteristics, entrepreneurs' characteristics, Human Resources (HR) development characteristics, business group characteristics, business assistance characteristics, information source characteristics, and partnership characteristics on the small-scale business' loan decision in terms of the region (Java and non-Java regions).

2. Research Method

This study explored the effect of economic characteristics (i.e., business income, interest rate, business profit, and collateral), entrepreneurs' characteristic (age), business characteristics (financial record), HR development characteristic (business training), group characteristic (cooperative membership), assistance characteristic (cooperative assistance, non-cooperative assistance, subsidized loan), information source characteristic (i.e., internet access), and partnership characteristic on the small industries' loan decision. The data used in this study is secondary data from the 2019 survey of micro and small industries and financial institution statistics. The samples of the study were 5,955 small industries in Indonesia,

consisting of 3,974 small industries in Java and 1,981 small industries outside Java.

The multinomial logistic regression was applied to analyze the small industries' loan decisions. Based on the number of the dependent variable, the logistic regression model can be divided into two types, logistic regression with dichotomous variable and with more than two variables. The dichotomous logistic regression is usually known as binary logistic regression, while those with more than two variables are known as multinomial logistic regression (Hosmer et al., 2013:269). The multinomial logistic regression involves dependent variables that comprise more than two categorical and continuous independent variables. The presence of dependent variable j will form a logit equation $j - 1$, in which each equation forms a binary logistic regression that compare one category to the reference category.

The general form of the multinomial logistic model is presented as follow:

$$z_j(x) = \ln \left(\frac{P(Y=j|x)}{P(Y=0|x)} \right) = \ln \left(\frac{P_j}{P_0} \right) = \beta_{j0} + \sum_{k=1}^k \beta_{jk} x_k \quad (1)$$

where:

$j = 1, 2, \dots, j$ represents the number of dependent variables.

$k = 1, 2, \dots, k$ represents the number of independent variables.

In this study, three categories of dependent variables were used:

$Y = 0$, not applying for both bank and non-bank loan (Reference category)

$Y = 1$, Applying for bank loan

$Y = 2$, Applying for non-bank loan

In this study, two logit equations were formulated as follows:

$$z_1 = \ln \left(\frac{P(Y=1|x)}{P(Y=0|x)} \right) = \beta_{10} + \beta_{11} x_1 + \beta_{12} x_2 + \beta_{13} x_3 + \dots + \beta_{1k} x_k + \varepsilon_1 \quad (2)$$

$$z_2 = \ln \left(\frac{P(Y=2|x)}{P(Y=0|x)} \right) = \beta_{20} + \beta_{21} x_1 + \beta_{22} x_2 + \beta_{23} x_3 + \dots + \beta_{2k} x_k + \varepsilon_2 \quad (3)$$

The next stage was applying the maximum likelihood method as follows:

$$P_0 = P(Y = 0|x) = \frac{1}{1 + e^{z_1} + e^{z_2}} \quad (4)$$

$$P_1 = P(Y = 1|x) = \frac{e^{z_1}}{1 + e^{z_1} + e^{z_2}} \quad (5)$$

$$P_2 = P(Y = 2|x) = \frac{e^{z_2}}{1 + e^{z_1} + e^{z_2}} \quad (6)$$

The analysis result is presented in *the marginal effect* value since the coefficient in the multinomial logistic regression model could not be directly interpreted (Cameron & Trivedi, 2009:48). Hence, it is necessary to calculate *the marginal/partial effect* value to obtain a better understanding of the model (Greene, 2018:829-831). The marginal effect value could determine the effect of a change in the independent variable unit on the probability of the j -th category (Cameron & Trivedi, 2005:501-502). Meanwhile, *marginal effect* represents the changes in the dependent variable when certain independent variables change, assuming that other independent variables are constant. The general form of marginal effect value for x_i in the multinomial logistic model is presented as follow:

$$\frac{\partial P_j}{\partial x_i} = P_j \left[\beta_j - \sum_{k=0}^J P_k \beta_k \right] = P_j [\beta_j - \bar{\beta}] \quad (7)$$

where β_j represents the independent variable regression coefficient or the j th slope (Greene, 2018).

Table 1. Research Variables

Variable (1)	Description (2)
Small Industries' Decision loan (<i>DLoan</i>)	0. Not applying for loan 1. Applying for bank loan 2. Applying for non-bank loan (individual, pawn, cooperative, government program, and private company)
Income (<i>ln_Income</i>)	Previous month income (in logaritma natural)
Interest (<i>Interest</i>)	Loan interest rate (percent)
Profit (<i>ln_Profit</i>)	Previous month profit (in logaritma natural)
Collateral1 (<i>DCollateral1</i>)	0. Not using collateral of <50% of the loan value 1. Collateral of <50% of the loan value
Collateral2 (<i>DCollateral2</i>)	0. Not using collateral of $\geq 50\%$ and < 100 % of the loan value 1. Collateral of $\geq 50\%$ and < 100 % of the loan value
Collateral3 (<i>DCollateral3</i>)	0. Not using collateral of $\geq 100\%$ of the loan value 1. Collateral of $\geq 100\%$ of the loan value
Entrepreneur Age (<i>DAge</i>)	0. Non-productive 1. Productive Age (21-64 y.o)
Financial Record (<i>DFin</i>)	0. Does not have a financial record 1. Have a financial record
Business Course (<i>DCourse</i>)	0. Never receiving business course 1. Have received business course
Cooperative Membership (<i>DMember</i>)	0. Not a cooperative member 1. Cooperative member
Cooperative Assistance (<i>DCoopAst</i>)	0. Never receiving Cooperative assistance 1. Have received Cooperative assistance
Non-cooperative assistance (<i>DNonCoopAst</i>)	0. Never receiving non-Cooperative assistance 1. Have received non-cooperative assistance (bank, government institution, private company, and NGO).
Subsidized Credit Assistance (<i>CreditAst</i>)	People's Business Credit (KUR) and non-KUR (million rupiah)
Internet Access (<i>DInternet</i>)	0. Do not have internet access 1. Have internet access
Partnership (<i>DPartner</i>)	0. Do not have a partnership 1. Have a partnership (bank, cooperative, government Agency, State-owned enterprises, Private company, and NGO)

Source : Research Finding

Table 2. Variables Description (1)

Independent Variable (1)	(2)	Turndown (3)	Bank loan (4)	non-Bank loan (5)
	Average	18.46	11.77	17.98
Income (Million Rupiah)	Standard Deviation	198.60	25.09	109.83
	Min	0.30	0.32	1
	Max	1,250	330.75	1,250

Independent Variable		Turndown	Bank loan	non-Bank loan
(1)	(2)	(3)	(4)	(5)
Interest Rate (Percent)	Average	0	14.29	7.86
	Standard Deviation	0	8.22	13.47
	<i>Min</i>	0	7	0
	<i>Max</i>	0	25	36
Profit (Million Rupiah)	Average	8.44	3.93	5.58
	Standard Deviation	193.39	7.69	29.88
	<i>Min</i>	0.02	0.03	0.02
	<i>Max</i>	1249.47	106.87	621.33
Credit Assistance (Million Rupiah)	Average	0.60	69.55	0.60
	Standard Deviation	9.25	185.36	5.46
	<i>Min</i>	0	0	1
	<i>Max</i>	300	3,000	100
No. of Samples		4,276	1,123	556

Source : Research Finding

Table 3. Variables Description (2)

Independent Variable		<i>Min</i>	<i>Max</i>	Small Industries Percentage		
				Turndown	Bank loan	non-Bank loan
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Collateral1	Not using Collateral	0	1	75.85%	14.34%	9.81%
	Collateral value <50%			0.00%	98.28%	1.72%
Collateral2	Not using Collateral	0	1	77.20%	12.78%	10.02%
	Collateral value ≥ 50% and < 100%			0.00%	99.11%	0.89%
Collateral3	Not using Collateral	0	1	75.70%	14.52%	9.78%
	Collateral value ≥ 100%			0.00%	98.18%	1.82%
Age	Non-productive age	0	1	79.05%	13.97%	6.98%
	Productive Age			71.34%	19.17%	9.49%
Financial Record	Do not have financial record	0	1	73.74%	14.81%	11.45%
	Have financial record			69.74%	23.18%	7.08%
Business Course	Never receiving any course	0	1	72.52%	18.44%	8.94%
	Receiving a course			62.23%	24.46%	14.56%
Cooperative Membership	Not a cooperative member	0	1	72.60%	18.78%	8.62%
	Become a cooperative member			50.70%	20.93%	28.37%

Independent Variable		Min	Max	Small Industries Percentage		
				Turndown	Bank loan	non-Bank loan
Cooperative assistance	Never receiving assistance	0	1	72.42%	18.77%	8.82%
	Receiving assistance			56.39%	21.15%	22.47%
Non-cooperative assistance	Never receiving assistance	0	1	74.83%	15.67%	9.50%
	Receiving assistance			47.42%	44.53%	8.05%
Internet access	Do not have internet access	0	1	76.56%	12.82%	10.62%
	Have an internet access			60.44%	33.30%	6.26%
Business partnership	Do not have a partnership	0	1	73.29%	17.94%	8.77%
	Have a partnership			64.89%	23.12%	11.99%

Source : Research Finding

As displayed in Table 2, the average income of small businesses applying for bank loans is Rp. 11,77 million rupiah. This indicates that low income may drive small businesses to apply for a bank loan. Following the Loanable Fund Theory, the interest rate is the fee that should be paid for the borrowed fund (Mishkin, 2019:3). Therefore, small industries that cannot repay the loan tend not to apply for a loan, as shown by the interest rate of small industries that do not apply for a loan (0%) and the highest interest rate on a bank loan (14.29%). This shows that the bank interest rate is still higher than other financing sources, and has become of the reasons for small business bank loan turndown. The highest average business profit is exhibited by those deciding not to take both loan sources (i.e., Rp. 8.44 million rupiahs). This finding indicates that small business tends to use their internal fund (e.g., retained profit) when they need additional funds. This is similar to the condition reported by Myers and Majluf (1984) regarding the company's financial behavior, that is, the company is likely to use internal financing (e.g., retained profit) before using external financing such as loan (Graham et al., 2017:488). The average credit assistance was found to be Rp 69.55 million. This result indicates that a higher amount of credit assistance becomes the consideration in applying for a bank loan.

As shown in table 3, small-scale industries are likely to apply for bank loans when they have collateral, compared to those with no collateral (98.28%, 99.11%, and 98.18%). In this study, the

productive age is defined as an age range in which an individual can generate income to fulfill his/her needs. Entrepreneurs in productive age are more willing to make bank or non-bank loans (17.17% and 9.49%, respectively), compared to those in non-productive age (13.97% and 6.98%). The result also indicates that small industries with financial records tend not to apply for financing (73.74%). However, when small industries with financial record need external financing, they prefer bank loans (23.18%), different from those with a no financial record that prefer a non-bank loan (11.45%). Small businesses that never received business courses were found not to apply for loans from both sources (72.52%). In comparison, those receiving business courses exhibited a higher tendency to apply for either bank or non-bank loans (24.46% and 14.56%, respectively). This result implies that information exposure and skill development can affect small businesses' loan decisions. Regarding cooperative membership, small industries that do not have cooperative membership prefer not to apply for a loan (72.60%). When deciding to apply for a loan, no significant difference was found between cooperative and non-cooperative members (18.78% and 20.93%, respectively). This insignificant difference implies that bank does not emerge as the first choice for small industries when they have a cooperative membership. Small industries that have never received assistance (either cooperative or non-cooperative assistance) prefer not to apply for loans from both sources

(72.42% and 74.83%, respectively). Regarding internet access, those with internet access tend to apply for a bank loan than a non-bank loan. Small industries with internet access (33.30%) prefer to apply for bank loans than those that do not access the internet (12.82%). Regarding non-bank loans, small industries with lower internet access tend not to apply for a bank loan (6.26). With regard to partnership, small industries that develop a partnership with other businesses prefer to apply for a loan, either bank or non-bank loans (23.13% and 11.99%), respectively), compared to those with no partnership (17.94% and 8.77%).

3. Result and Discussion

3.1 Results

This section describes the empirical analysis of small industries' loan decisions in Indonesia in terms of region. The multinomial logistic regression model result is presented in Table 4. Table 4 shows that in the first model, the marginal effect value of business income positively affects the small industries' loan decision in Indonesia and Java region by 0.00007 and 0.00036, respectively (its indicate that every 1% increase in business income is likely to increase the small industries' probability in applying for bank loans by 0.01% and 0.04%, respectively), while in

non-Java region it has a negative effect with a marginal effect value of 0.00132 (its indicate that every 1% increase in business income is likely to decrease the small industries' probability in applying for bank loans by 0.13%). Meanwhile, in the second model, business income negatively affects the loan decision except for those in Indonesia (positive effect) by 0.00850, 0.01051, and 0.00417. This value implies that a higher income may increase the probability of applying for either bank or non-bank loan. This finding supports the finding of previous studies Messah & Wangai (2011) and Hardana et al. (2019) on the positive effect of business income on loan decisions. This is understandable, as a higher income means higher repayment probability. However, a negative effect implies that a higher income may decrease the probability of applying for either bank or non-bank loan. This finding supports the finding of previous study Magboul & Hassan (2016) on the negative effect of business income on loan decisions. This is understandable, as higher income means the ability of business owners to finance their own business. However, In this study, business income exhibits a statistically insignificant effect in Indonesia, Java, and non-Java region both in the first and second models.

Table 4. Multinomial Logistic Regression Result

Independent Variabel	Indonesia		Java		Non-Java	
			<i>Marginal Effect</i>			
	(Turndown = Reference Category)					
	Model 1 Bank Loan	Model 2 Non-Bank Loan	Model 1 Bank Loan	Model 2 Non-Bank Loan	Model 1 Bank Loan	Model 2 Non-Bank Loan
(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln_Income (percent)	0.00007 (0.00629)	0.00850 -0.00639	0.00036 (0.00698)	-0.01051 -0.00851	-0.00132 (0.01352)	-0.00417 -0.00879
interest (percent)	0.00288*** -0.00031	0.00222*** -0.00038	0.00261*** -0.00034	0.00176*** -0.00046	0.00339*** -0.00069	0.00249*** -0.00078
ln_Profit (percent)	-0.00499 (0.00677)	-0.01006 -0.00701	-0.00363 (0.0072)	-0.01247 -0.00891	-0.00792 (0.01553)	0.00073 -0.01018
DCollateral1 (Collateral < 50% = 1)	0.87667*** (0.01757)	-0.08221*** -0.01351	0.86493*** (0.02301)	-0.08798*** -0.01837	0.91369*** (0.02240)	-0.05139*** -0.01768
DCollateral2	0.88640***	-0.09334***	0.89658***	-0.10491***	0.88695***	-0.059222***

Variabel Bebas	Indonesia		Jawa		Luar Jawa	
	Marginal Effect					
	(Tidak Meminjam = Kategori Acuan)					
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
	(Pinjaman Bank)	(Pinjaman Non Bank)	(Pinjaman Bank)	(Pinjaman Non Bank)	(Pinjaman Bank)	(Pinjaman Non Bank)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
(Collateral $\geq 50\%$ & $< 100\%$ = 1)	(0.01674)	-0.01283	(0.02000)	-0.01629	(0.02681)	-0.01885
<i>DCollateral3</i>	0.88173***	-0.07954***	0.88869***	-0.09991***	0.88636***	-0.03813**
(Collateral $\geq 100\%$ = 1)	(0.01819)	-0.01311	(0.02208)	-0.01647	(0.02922)	-0.01772
<i>DAge</i>	0.00733	0.03232**	0.00611	0.03621*	0.00838	0.02526
(Productive Age = 1)	(0.01526)	(0.01495)	(0.01651)	(0.01937)	(0.03489)	(0.01902)
<i>DFinance</i>	0.01598**	-0.04532***	0.01136	-0.05039***	0.02769	-0.03235**
(Have a financial record = 1)	(0.00795)	-0.00951	(0.00867)	-0.01209	(0.01788)	-0.014
<i>DCourse</i>	-0.01712*	0.04396**	-0.00933	0.01746	-0.02829*	0.06875*
(Receives a Business Course = 1)	(0.01034)	-0.02147	(0.01412)	-0.02618	(0.01608)	-0.03661
<i>DMember</i>	-0.01727	0.18735***	-0.00013	0.09271**	-0.03306	0.31211***
(Become a cooperative member = 1)	(0.01520)	-0.04161	(0.02519)	-0.0466	(0.02025)	-0.08887
<i>DCoopAst</i>	-0.04113	0.06005**	-0.03274***	0.08607**	-0.13984	0.0232
(Receives Assistance = 1)	-0.01631	-0.02906	-0.00836	-0.04202	-0.10668	-0.031
<i>DNonCoopAst</i>	0.04113**	-0.02291	0.04739*	-0.02305	0.02029	-0.01856
(Receives Assistance = 1)	-0.01894	-0.01428	-0.02417	-0.02034	-0.02798	-0.01567
<i>CreditAst</i> (million rupiah)	0.00134***	-0.00062	0.00100***	-0.00096	0.00189***	-0.00024
	(0.00027)	(0.00083)	(0.00027)	(0.00121)	(0.00059)	(0.00092)
<i>DInternet</i>	0.02574**	-0.03949***	0.01869*	-0.05482***	0.05264*	-0.01511
(Internet Access = 1)	-0.01055	-0.00993	-0.01064	-0.01287	-0.02988	-0.01416
<i>DPartneship</i>	-0.01641**	0.03360**	-0.01889**	0.04053**	-0.00286	0.01209
(Have a partnership = 1)	-0.00811	-0.01317	-0.00845	-0.01682	-0.02134	-0.01733
Goodness of Fit						
<i>Count R2</i>	0.869		0.869		0.912	
<i>Prob > Chi2</i>	0,0000		0,0000		0,0000	
<i>Number of Observations</i>	5,955		3,974		1,981	

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$

Score in parentheses indicates standard error value

The interest rate was found to positively and significantly affect the small industries' loan decisions both in the first and second models. Its marginal effect values (0.00288 and 0.00222, respectively) indicate that every 1% increase in interest rate is likely to increase the small industries' probability in applying for bank and non-bank loans by 0.29% and 0.22%, respectively. This finding contradicts the Loanable fund theory

that suggests that a higher interest rate may lower demands on financing, yet the condition may occur in ceteris paribus (Howells & Bain, 2007:205). The marginal effect value was found to be significant and positive for Java and non-Java regions in both models (0.00261 and 0.00339 in the first model, and 0.00176 and 0.00249 in the second model, respectively). This finding is consistent with Sari (2014), who report a positive,

significant effect of interest rate on customers' loan decisions while contradicting Ajagbe (2012) and Ndungu (2016) finding on negative and significant effect of interest rate on small and medium-scale business' loan decision.

The business profit was found to negatively affect the small industries' loan decisions in Indonesia, Java, and the non-Java region both in the first and second models, except second model in non-Java region (positively). In other words, the increased profit may lower the probability of applying for a loan. This finding is consistent with Myers and Majluf's (1984) study on the company's financial behavior, in which the company prefers to use internal funds (retained profit) before using external financing (debt). However, it should be noted that, in this study, the effect of business profit is statistically insignificant..

Collateral also becomes one of the reasons preventing small industries from applying for bank loans (BPS, 2020:50). As presented in the table, collateral1, both in the first and second model, significantly affects Indonesian small industries' loan decision. The marginal effect value in the first model was positive (0.87667), indicating that every 1% increase in collateral1 may increase the probability of applying for a bank loan by 87.367%. In contrast, the marginal effect value in the second model was negative (0.08221), meaning that every 1% increase in collateral1 may decrease the probability of applying for a non-bank loan by 8.22%. The condition also applies for Java and the non-Java region as well as the collateral2 and collateral3. This finding is consistent with Chandio et al.'s (2017) and Daisy et al.'s (2020) finding of a positive relationship between collateral availability and formal loan access. However, this finding is different from previous studies (e.g., Magboul & Hassan, 2016; Parida & Pradhan, 2020) that report a significant, negative relationship between collateral and MSEs' bank loan decision.

Entrepreneurs' age was found not to significantly affect the small industries' bank loan decisions both in Indonesia and Java region. For the non-Java region, insignificance was found in both the first and second models. This finding supports previous studies (e.g., Hardana et al.

2019; Temesgen et al., 2018) reporting that age does not significantly affect the farmers' decision to apply loans in microfinance institutions. In the second model, age was found to significantly and positively affect small industries' loan decisions in Indonesia and Java region, as shown by the marginal effect value of 0.03233 and 0.03621, respectively. The value implies that every 1% increase in entrepreneurs' age is likely to increase the probability of applying for a non-bank loan in the Indonesia and Java region by 3.23% and 3.62%, respectively. This finding is consistent with Akoten et al. (2006) finding that individuals aged 21-35 years old prefer friends or family over bank loans due to the high risk of default.

In the first model, the financial record was found to significantly and positively affect small industries' probability of applying for bank loans in Indonesia, as shown by the marginal effect value of 0.01598. Meanwhile, in the second model, the financial record was found to significantly and negatively affect small industries' probability of applying for a non-bank loan in Indonesia, as shown by the marginal effect value of 0.04532. This result implies that small industries with financial records prefer to apply for a bank loan. This is consistent with Mulandi (2013), who found that business with a financial record is likely to apply for a bank loan, compared to those with no financial record. This study also supports Magboul & Hassan (2016), who found a positive and significant relationship between the financial record and MSEs' decision to apply for a formal microfinance loan. In the first model, the financial record was found to positively, yet not significantly, affect the small-scale industries' decision to apply for bank loans in Java and non-Java region. Meanwhile, in the second model, the financial record was found to negatively and significantly affect the loan decision, as shown by the marginal effect value of 0.05039 and 0.03235.

Business course in this study is defined as the course received by small industries regarding managerial, production, and marketing skills, among others. In the first model, the business course was found to significantly and negatively affect small industries' bank loan decisions in Indonesia and non-Java region, as shown by the

marginal effect value of 0.01666 and 0.02889, respectively. In the second model, the business course was found to significantly and positively affect small industries' non-bank loan decisions in Indonesia and non-Java region, as shown by the marginal effect value of 0.04396 and 0.068375, respectively. This finding is in line with Magboul and Hassan (2016), who found that small business that has received business course has better development potential, thus requiring external financing. A different result was found for the Java region, in which business courses did not exhibit a significant effect in both models.

In the second model, the cooperative membership was found to exhibit a positive and significant effect in Indonesia, Java, and non-Java region, as shown by the marginal effect value of 0.18735, 0.09271, and 0.31211. This finding supports Magboul & Hassan (2016), who found that MSEs that join a social group tend to apply for a loan compared to those who didn't. This is due to the social network may facilitate information on loan opportunities and sources. In the first model, cooperative membership exhibited a negative effect on the small industries' probability of applying for bank loans in Indonesia, Java, and non-Java regions. However, the effect was not statistically significant.

In this study, cooperative assistance refers to business-related assistance, such as loan, material procurement, and marketing assistance, among others. For this variable, the second model showed that cooperative assistance exhibit a significant and positive effect in Indonesia and Java region. Meanwhile, the first model showed that cooperative assistance has a negative effect. This finding indicates that small industries tend to apply for a non-bank loan when they receive cooperative assistance, though it is not significant in the Java region. Both the first and second models showed that cooperative assistance does not significantly affect the small industries' probability of applying for bank and non-bank loans in the non-Java region. Non-cooperative assistance defines the assistance from non-cooperative institutions, including the banking institution. In the first model, non-cooperative assistance was found to significantly and positively

affect small industries' probability of applying for bank loans in the Indonesia and Java region, as shown by the marginal effect value of 0.04113 and 0.04379, respectively. Meanwhile, in the second model, this variable did not significantly affect the probability of applying for a non-bank loan. Similar to the cooperative assistance, both the first and second models showed that the non-cooperative assistance does not significantly affect the small industries' probability of applying for bank and non-bank loans in the non-Java region. The government-sponsored credit assistance, e.g., Kredit Usaha Rakyat, was found to significantly and positively affect small industries' probability of applying for bank loans in Indonesia, Java, and the non-Java region, as shown by the marginal effect value of 0.00134, 0.00100, and 0.00189. The value indicates that every one million rupiah increase in credit assistance can increase small industries' probability of applying for bank loans in Indonesia, Java, and the non-Java region by 0.13%, 0.10%, and 0.19%. Meanwhile, in the second model, this variable did not significantly affect the probability of applying for a non-bank loan. This is probably due to the fact that credit assistance is a banking product that is in line with the goal of microcredit distribution (Kemenko Perekonomian, 2019a). Thus, small industries are likely to apply for bank loans when receiving subsidized credit assistance.

In the first model, internet access was found to significantly and positively affect small industries' probability of applying for bank loans in Indonesia, Java, and non-Java regions, as shown by the marginal effect value of 0.02574, 0.01869, and 0.05264, respectively. The value indicates that every 1% increase in internet access can result in the increased probability of applying for bank loans in Indonesia, Java, and non-Java region by 2.57%, 1.86%, and 5.26%, respectively. In the second model, internet access was found to significantly and negatively affect the probability of applying for a non-bank loan, except the effect was found to be statistically non-significant in the non-Java region. This finding is consistent with Buyinza et al. (2018), who report a positive and significant effect of internet use since the internet provides loan-related information.

In the first model, the partnership was found to significantly and negatively affect small industries' loan decisions in Indonesia and Java region, as shown by the marginal effect value of 0.01641 and 0.01889, respectively. In the second model, the partnership was found to significantly and positively affect small industries' non-bank loan decisions in Indonesia and Java region, as shown by the marginal effect value of 0.03360 and 0.04053, respectively. Following Statistics Indonesia's publication, some institutions that establish a partnership with MSEs include the private company (36.83%), government agencies (5.65%), state/regional-owned enterprises (3.28), banking institutions (2.53%), and other institutions (52.02%) (BPS, 2020:136-139). This data showed that small industries that have a business partnership tend to choose a non-bank loan, due to the small percentage of partnerships with banks which is only 2.53%. Both the first and second models in this study showed that the partnership does not significantly affect the small industries' probability of applying for bank and non-bank loans in the non-Java region.

3.2 Discussion

The regression result shows that business income and profit in both models do not significantly affect small industries' loan decisions in Indonesia, Java, and the non-Java region. In other words, these two variables do not serve as the only consideration when deciding to apply for bank and non-bank loans. From the lender's perspective, these variables (i.e., income and profit) do not serve as the only requirements needed when applying for a loan (i.e., other requirements such as collateral), even according to study results Srinivas (2016) states that for informal/personal loans, the decision is made based on trust and good relationships.

The regression result displayed in Table 4 showed that the increased interest rate might lead to a higher probability of applying for a loan. This condition may also be affected by other factors, including income. A stable income can affect small industries' repayment ability. In other words, small industries are still capable

of repaying the debt despite the high interest rate. Another possible factor is the government's encouragement to boost credit demands due to the low inflation rate. Statistics Indonesia states that the 2019 inflation (2.72) was the lowest in the last ten years (BPS, 2022). The regression result showed that collateral availability affects the bank loan decision among small industries in Indonesia, Java, and non-Java regions. This result indicates that collateral still becomes one of the principal analyses in banking institutions when approving a loan (Kasmir, 2014:95). This condition relates to the MSEs' hindrance, as found in this study, collateral availability becomes one of the main reasons when applying for a bank loan. Therefore, small industries with no collateral prefer to apply for a non-bank loan (in the introduction section).

Regarding age, this study found that entrepreneurs' age did not significantly affect the small industries' probability of applying for a bank loan, indicating that age is not the only factor determining small industries' loan decisions. In Indonesia and Java region, age was found to positively affect the probability of applying for a non-bank loan. This shows that in taking loans from non-bank sources, small industries see the ability to generate income which is used for repayment because productive age is the age at which a person is still able to generate income to meet their needs. Another variable in this study, financial record, still serves as one of the bank loan requirements and is considered as one of the risk mitigation (Mulyati, 2016:83). Therefore, small industries with no financial record tend to apply for a non-bank loan since non-banking institutions do not require financial records for a loan application. This result is supported by the negative marginal effect value in both models in Indonesia, Java, and the non-Java region.

The business course was found to significantly affect small industries' loan decisions in Indonesia and the non-Java region. This finding implies that knowledge obtained from the course may encourage small industries to develop their business and hence motivate them to look for external financing. It was found that

small industries prefer to apply for a non-bank loan. Statistics Indonesia's survey result shows that business courses are commonly organized by the government, private parties, and NGOs, while no course is organized by the banking sector (BPS, 2020:169-172). This finding explains why small industries that participate in business courses prefer to apply for a non-bank loan. The regression result shows a non-significant effect, implying that the business course they receive is not effective in encouraging them to develop. Cooperative is established mainly to improve its members' economic welfare through financing, among others. Therefore, small industries that become a cooperative member can benefit from their membership by applying loans for their business development, as indicated by the significant, positive marginal effect value in Indonesia, Java, and non-Java regions.

The source of assistance may determine small industries' preferred loan source when needing additional funds. This is statistically supported by the significant, positive value in both models, except for the non-Javanese region (not significant). This insignificant result indicates that assistance does not necessarily encourage small industries to apply for a loan. This condition can be considered an evaluation when providing assistance in the non-Java region. Credit assistance received by small industries in this study is also considered in line with the government's goal of improving financing access. Therefore, in the future, it is necessary to increase credit allocation for small industries. Information on credit sources was also found to play a pivotal role in small industries' loan decisions. In this regard, the internet may significantly influence the decision regarding financing sources. The results of the partnership variable regression show that small industries are more likely to take non-bank loans than to take bank loans due to the small percentage of partnerships with banks. Therefore, the results of this study can be a suggestion for the government to improve partnerships with banks. According to the research results Siswanto et al. (2019), good relations with banks can improve decisions to take bank loans.

4. Conclusion

The result and discussion above show that business income positively affects small industries' loan decisions, both from banks and non-bank institutions. However, this finding is not statistically significant. Business profit was also found to have an insignificant effect on loan decisions. This shows that business income and business profits are not the only considerations for small industries in taking business capital loans. Regarding interest rate, this study found that, interestingly, the increased interest rate positively relates to higher credit demands. This condition may be accounted for by some factors, such as stable income and low inflation rate, among others. However, collateral still emerges as the main hindrance when applying for a bank loan. The result indicates that small industries with collateral prefer to apply for a bank loan, while those with no collateral prefer to choose non-bank loans. The result of this study can be used as a recommendation for the government when making policies on credit distribution to small industries, which often face issues on collateral.

The financial record in this study was found to positively and significantly affect small industries' bank loan decisions in Indonesia. However, from a regional basis (i.e., Java and non-Java region), this variable is not statistically significant. This finding implies that financial record still becomes one of the loan application requirements. This study also found that business course negatively affects bank loan decision because most of the courses received by small industries are organized by non-bank institutions. Following this result, the government is suggested to improve small industries' financial literacy. It is also suggested that a banking institution provide courses to improve small industries' probability of applying for a bank loan. Cooperative membership can also affect small industries' preference for a non-bank loan decision. Some cooperatives are known to play dual roles that also distribute microcredit (Kemenkopukm, 2016). Therefore, cooperatives can play a pivotal role in improving demands on a bank loan. Source of assistance and partnership were also found to affect small industries' loan decisions and sources. Therefore, the present

study can help the government design a policy on assistance for small industries in order to improve the partnership between banking institutions and small industries. Information on credit also affects small industries' loan decisions, as indicated by the significant effect of internet access as the source of information. In this regard, socialization on credit sources should be improved through any means, such as social group or business courses, among others.

One of the limitations of this study is the use of the 2019 Micro and Small Industry Survey data that do not provide data on financial institutions, especially the banking institutions, and the data on distance from the nearest financial service. The presence of these data can possibly explain the small industries' loan decisions. Another limitation of this study is the use of cross-sectional data that prevents the researcher from exploring the loan decision preference and its underlying factors.

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6. Appendices

Multinomial Logistics Regression Results - Robust with STATA 16

6.1 Indonesia

```
. quietly mlogit dloan ln_income interest ln_profit dcollateral1 dcollateral2 dcollateral3 dage dfinance dcourse dmember dcoopast dnoncoopast creditast
> dinternet dpartner, base (0) vce(robust)
```

```
. mfx compute, predict(outcome(1))
```

```
Marginal effects after mlogit
y = Pr(dloan=1) (predict, outcome(1))
= .04671005
```

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X
ln_inc~e	-.0000666	.00629	-0.01	0.992	-.012397	.012264	1.49914	
interest	.0028813	.00031	9.26	0.000	.002272	.003491	5.94481	
ln_pro~t	-.0049953	.00677	-0.74	0.460	-.018256	.008266	.590327	
dcolla~1*	.8766718	.01757	49.91	0.000	.842243	.9111	.058438	
dcolla~2*	.8864038	.01674	52.95	0.000	.85359	.919217	.075063	
dcolla~3*	.8817342	.01819	48.47	0.000	.846078	.917391	.055248	
dage*	.0073272	.01526	0.48	0.631	-.022577	.037232	.939882	
dfinance*	.0159775	.00795	2.01	0.044	.000401	.031554	.483963	
dcourse*	-.0171256	.01034	-1.66	0.098	-.037394	.003143	.070193	
dmember*	-.0172708	.0152	-1.14	0.256	-.047066	.012524	.036104	
dcoopast*	-.0132595	.01631	-0.81	0.416	-.04522	.018701	.038119	
dnonco~t*	.0411344	.01894	2.17	0.030	.004012	.078257	.110495	
credit~t	.0013408	.00027	4.98	0.000	.000813	.001868	13.6065	
dinter~t*	.0257434	.01055	2.44	0.015	.005067	.04642	.295046	
dpartner*	-.0164084	.00811	-2.02	0.043	-.032301	-.000516	.17649	

(*) dy/dx is for discrete change of dummy variable from 0 to 1

```
. mfx compute, predict(outcome(2))
```

```
Marginal effects after mlogit
y = Pr(dloan=2) (predict, outcome(2))
= .10008745
```

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X
ln_inc~e	.0085044	.00639	1.33	0.183	-.004012	.021021	1.49914	
interest	.0022201	.00038	5.88	0.000	.00148	.00296	5.94481	
ln_pro~t	-.0100564	.00701	-1.43	0.151	-.023795	.003682	.590327	
dcolla~1*	-.0822156	.01351	-6.09	0.000	-.108689	-.055742	.058438	
dcolla~2*	-.0933395	.01283	-7.27	0.000	-.118493	-.068186	.075063	
dcolla~3*	.0795417	.01311	6.07	0.000	.105246	.053838	.055248	
dage*	.0322322	.01495	2.16	0.031	.003015	.061631	.939882	
dfinance*	-.0453252	.00951	-4.77	0.000	-.063961	-.026689	.483963	
dcourse*	.0439561	.02147	2.05	0.041	.001873	.086039	.070193	
dmember*	.1873524	.04161	4.50	0.000	.105806	.268899	.036104	
dcoopast*	.0600492	.02906	2.07	0.039	.0031	.116999	.038119	
dnonco~t*	-.0229098	.01428	-1.60	0.109	-.050906	.005086	.110495	
credit~t	-.0006183	.00083	-0.74	0.457	-.002248	.001011	13.6065	
dinter~t*	-.0394971	.00993	-3.98	0.000	-.058967	-.020027	.295046	
dpartner*	.0336034	.01317	2.55	0.011	.007783	.059424	.17649	

(*) dy/dx is for discrete change of dummy variable from 0 to 1

6.2 Java Region

```
. quietly mlogit dloan ln_income interest ln_profit dcollateral1 dcollateral2 dcollateral3 dage dfinance dcourse dmember dcoopast dnoncoopast creditast
> dinternet dpartner, base (0) vce(robust)
```

```
. mfx compute, predict(outcome(1))
```

```
Marginal effects after mlogit
y = Pr(dloan=1) (predict, outcome(1))
= .04259247
```

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X
ln_inc~e	.0003623	.00698	0.05	0.959	-.013312	.014036	1.60093	
interest	.0026107	.00034	7.79	0.000	.001954	.003268	5.99605	
ln_pro~t	-.0036316	.0072	-0.50	0.614	-.017751	.010488	.656361	
dcolla~1*	.8649336	.02301	37.59	0.000	.81984	.910027	.061399	
dcolla~2*	.8965797	.02	44.83	0.000	.857385	.935775	.072974	
dcolla~3*	.8886919	.02208	40.25	0.000	.84542	.931964	.052843	
dage*	.006113	.01651	0.37	0.711	-.026252	.038478	.937343	
dfinance*	.0113628	.00867	1.31	0.190	-.005637	.028362	.497484	
dcourse*	-.0093337	.01412	-0.66	0.508	-.037	.018333	.063412	
dmember*	-.0001331	.02519	-0.01	0.996	-.049509	.049243	.031958	
dcoopast*	-.0327381	.00836	-3.91	0.000	-.049133	-.016343	.0385	
dnonco~t*	.0473889	.02417	1.96	0.050	.000021	.094756	.103422	
credit~t	.0010003	.00027	3.71	0.000	.000472	.001528	11.4126	
dinter~t*	.018691	.01064	1.76	0.079	-.00216	.039542	.334927	
dpartner*	-.0188976	.00845	-2.24	0.025	-.035468	-.002328	.188978	

(*) dy/dx is for discrete change of dummy variable from 0 to 1

```
. mfx compute, predict(outcome(2))
```

Marginal effects after mlogit
y = Pr(dloan==2) (predict, outcome(2))
= .11692063

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X
ln_inc~e	.0105069	.00851	1.23	0.217	-.006178	.027191	1.60093	
interest	.0017595	.00046	3.79	0.000	.00085	.002669	5.99605	
ln_pro~t	-.0124739	.00891	-1.40	0.161	-.029931	.004984	.656361	
dcolla~1*	-.0879821	.01837	-4.79	0.000	-.123996	-.051968	.061399	
dcolla~2*	-.1049148	.01629	-6.44	0.000	-.136839	-.072991	.072974	
dcolla~3*	-.099915	.01647	-6.07	0.000	-.132203	-.067627	.052843	
dage*	.0362095	.01937	1.87	0.062	-.001756	.074175	.937343	
dfinance*	-.0503991	.01209	-4.17	0.000	-.074096	-.026703	.497484	
dcourse*	.0174631	.02618	0.67	0.505	-.033851	.068777	.063412	
dmember*	.0927081	.0466	1.99	0.047	.001367	.184049	.031958	
dcoopast*	.0860731	.04202	2.05	0.041	.003724	.168422	.0385	
dnonco~t*	-.0230551	.02034	-1.13	0.257	-.062928	.016818	.103422	
credit~t	-.0009643	.00121	-0.79	0.427	-.003343	.001414	11.4126	
dinter~t*	-.0548248	.01287	-4.26	0.000	-.080041	-.029609	.334927	
dpartner*	.04053	.01682	2.41	0.016	.007561	.073499	.188978	

(*) dy/dx is for discrete change of dummy variable from 0 to 1

6.3 Non-Java Region

```
. quietly mlogit dloan ln_income interest ln_profit dcollateral1 dcollateral2 dcollateral3 dage dfinance dcourse dmember dcoopast dnoncoopast creditast  
> dinternet dpartner, base (0) vce(robust)
```

```
. mfx compute, predict(outcome(1))
```

Marginal effects after mlogit
y = Pr(dloan==1) (predict, outcome(1))
= .05329082

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X
ln_inc~e	-.0013206	.01352	-0.10	0.922	-.027818	.025177	1.29494	
interest	.0033856	.00069	4.94	0.000	.002043	.004729	5.84201	
ln_pro~t	-.0079217	.01553	-0.51	0.610	-.038361	.022518	.457859	
dcolla~1*	.9136863	.0224	40.78	0.000	.869774	.957598	.053004	
dcolla~2*	.8869486	.02681	33.09	0.000	.834407	.93949	.079253	
dcolla~3*	.8863628	.02922	30.34	0.000	.829102	.943623	.060071	
dage*	.0083838	.03489	0.24	0.810	-.060002	.07677	.944977	
dfinance*	.0276992	.01788	1.55	0.121	-.007342	.06274	.45684	
dcourse*	-.0282899	.01608	-1.76	0.079	-.059808	.003228	.083796	
dmember*	-.0330576	.02025	-1.63	0.103	-.072754	.006638	.044422	
dcoopast*	-.139842	.10668	1.31	0.190	-.06924	.348924	.037355	
dnonco~t*	.0202874	.02798	0.72	0.468	-.034558	.075133	.124685	
credit~t	.001892	.00059	3.21	0.001	.000735	.003049	18.0075	
dinter~t*	.0526417	.02988	1.76	0.078	-.00592	.111203	.215043	
dpartner*	-.0028575	.02134	-0.13	0.893	-.044677	.038962	.151439	

(*) dy/dx is for discrete change of dummy variable from 0 to 1

```
. mfx compute, predict(outcome(2))
```

Marginal effects after mlogit
y = Pr(dloan==2) (predict, outcome(2))
= .05748726

variable	dy/dx	Std. Err.	z	P> z	[	95% C.I.	]	X
ln_inc~e	-.0041675	.00879	-0.47	0.636	-.021401	.013066	1.29494	
interest	.0024994	.00078	3.21	0.001	.000972	.004027	5.84201	
ln_pro~t	.0007304	.01018	0.07	0.943	-.019216	.020677	.457859	
dcolla~1*	-.0513945	.01768	-2.91	0.004	-.086045	-.016744	.053004	
dcolla~2*	-.059222	.01885	-3.14	0.002	-.096168	-.022277	.079253	
dcolla~3*	-.0381308	.01772	-2.15	0.031	-.07287	.003391	.060071	
dage*	.0252656	.01902	1.33	0.184	-.012018	.062549	.944977	
dfinance*	-.0323461	.014	-2.31	0.021	-.059782	-.00491	.45684	
dcourse*	.0687538	.03661	1.88	0.060	.003008	.140515	.083796	
dmember*	.3121142	.08887	3.51	0.000	.137934	.486295	.044422	
dcoopast*	.0232032	.031	0.75	0.454	-.037561	.083968	.037355	
dnonco~t*	-.0185575	.01567	-1.18	0.236	-.049277	.012162	.124685	
credit~t	-.0002364	.00092	-0.26	0.798	-.002049	.001576	18.0075	
dinter~t*	-.0151128	.01416	-1.07	0.286	-.042863	.012637	.215043	
dpartner*	.0120952	.01733	0.70	0.485	-.02187	.046061	.151439	

(*) dy/dx is for discrete change of dummy variable from 0 to 1