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# Socio-economic factors influencing the decision to take credit for small entrepreneurs on the example of Yogyakarta city in Indonesia

Abstract. The study aims to figure out the socio-economic factors influencing the decision to take credit from banks by small entrepreneurs. This research is a quantitative study and uses binary logistic regression with the Cumulative Distribution Function (CDF) to determine the form of relationship between the decision to take credit with the influencing factor. Data was collected with questionnaire from 130 entrepreneursrepresentatives of small licensed business from five industries in 2022. The samples were taken in stratified random sampling.

The results showed that the significant factors which affect the decision to take bank credit were gender, education level, markets served, industry, and collateral. It is concluded that the Bank and the Government of Yogyakarta could introduce the mechanisms which encourage entrepreneurs to be willing to access credit resources from the banks.

Keywords: Decision-Making; Credit; Small Entrepreneurs; Socio-Economic Factors; Demographics; Banks; MSME; SME

JEL Classification: A10; A12; D21; D70

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### 1. Introduction and Brief Literature Overview

The Indonesian micro, small, and medium enterprises (MSMEs) play an essential role in the absorption of human resources. Small and medium-sized enterprises (SMEs) are the base of the economics of many countries around the world. In Sweden, for example, small and medium enterprises of the manufacturing sectors are the backbone of the economy creating working places and exports flows (de Sousa Jabbour et al., 2020), as vell as in the Visegrad group countries of the Czech Republic, Slovak Republic, Poland, and Hungary (Rahman et al., 2017). Given the economic significance and essential role of SMEs in job creation, innovation, import-substitution, ensuring income equality, and poverty alleviation, it is very crucial to systematically analyze the external factors that affect the growth of SMEs independently (Eggers, 2020).

The existence of small and medium enterprises is recognized by the government to contribute to the economic growth, stability, employment, and creation of new jobs and develop social cohesion (Allu et al., 2020). In the developing countries, the role of SMEs is very significant as they contribute to the improvement of income distribution, employment creation, poverty reduction, rural development, industrial development, and export growth. In Ghana, SMEs contribute significantly to the Bank's profitability (Boadi et al., 2017). Although they play an important role, SMEs face some of the obstacles to improve competitiveness, performance, and access to credit. In Ghana, two-thirds of small and medium-sized enterprises financed their business with their funds, while also utilizing funds from traditional savings facilities and microloans financial mechanisms, and only 10% of financing sources come from formal banks. Internal factors in the organization directly affect various aspects of business operations. In Wa Municipality of Ghana, many factors such as age, gender, education, household size, corporate age, income, and wealth jointly influenced the participation of small-scale entrepreneurs in the credit market (Moeuf et al., 2018).

In Italy, it is known that the product market competition limits external financing, including those from banks (Cerasi et al., 2017).

SMEs' owners need funds to invest into their business and cover the cost of their operation. Ideally, the funding comes from the own sources, consisting of profit withheld and depreciation, then, from external sources in the form of debt or credit and equity (Kumar & Rao, 2016).

Credit is a type of source of funds from outside the company offered by the banks to micro and small businesses, however, they may face the reality that they are not fortunate when trying to get a loan from the bank. Banks and SMEs owners must follow the principle of lending or credit. One of the credit terms that SMEs owners must fulfill is the presence of sufficient collateral to reduce the risk of due credit (de Sousa Jabbour et al., 2020). Banks require collateral to manage the risk and minimize potential losses (Rahman et al., 2017). Theoretically, there are three essential dimensions to understand small business financing decisions, namely: entrepreneurs' individual factors, organizational (firm-level) factors and contextual (institutional) factors (Nguyen & Canh, 2020).

According to the Indonesian Law of Undang Undang Republik Indonesia (UU RI) No 20 of 2008, Small Business is defined as a small business of a standalone productive economy, conducted by a person or business entity that is not a subsidiary or non-branch of a company owned, mastered, or becomes part either directly or indirectly from the medium enterprises or large enterprises that meet the small business criteria as referred to in this Law, while a Small Business capital criteria is having net worth more than Rp 50,000,000 (fifty million rupiahs) up to at most Rp 500,000,000 (five hundred million rupiahs) excluding land and building businesses (cit. from Al-Momani et al., 2020).

Despite the net worth of criteria, SMEs' owners lack capital. In Indonesia, as much as 17.50% of SMEs increase their capital by accessing capital from banks, the remaining 82.50% do not access money from the bank, but rather non-bank institutions such as the save and borrowing cooperative (KSP), individuals, families.

Despite the fact that women-entrepreneurs contribute to the creation of social value in society while operating the business and solving the financial problems (Ribeiro-Soriano, 2017), banks in Indonesia discriminate against women by charging them 0.5% higher credit costs,

providing 5% less credit and demanding higher collateral than from male entrepreneurs (de Sousa Jabbour et al., 2020). The SME owner's decision to apply for credit from financial institutions is also influenced by risk-averse and the desire to maintain control of a company. Whereas gender, the level of income and religion adopted are not identified as the significant predictors of decision-making (Spicka, 2020), it is stated that women as individuals with high-risk reluctance or desire to maintain control, may deliberately opt not to seek external funding.

Non-formal education has a positive impact on the decision-making of entrepreneurs. A case-study in Ghana shows that the respondents who had a non-formal education of 13% were more efficient in taking credit decisions than those who did not have formal or non-formal education. The entrepreneurs in Indonesia need formal and non-formal education to make better credit decisions (Chienwattanasook et al., 2019). Small entrepreneurs with low education tend to be reluctant to access credit from formal institutions due to the limitations of understanding of financial statements and difficulties during the loan application process (Nguyen et al., 2020).

Access to bank loans for SMEs differs based on the industry and the arena of activity. For example, in Kazakhstan, SME in manufacturing which operates a factory, most probably has a financial consultant and an experienced team behind the operations which has a positive impact on its credit decision-making (Mukhametzhan et al., 2020).

Most women entrepreneurs argue that bad market demand is detrimental to sales. The decline in sales affects their saving ability and consequently they are threatened not to return the credit. These credits are used to operate their business (Al-Momani et al., 2020). While studying the mechanisms of SMEs crediting mechanisms in Italy, out of six main variables included in the model, the interest rate, infrastructure, market access, and competition were found significant (Caselli et al., 2019).

### 2. Research Framework and Methods

There is a number of factors that generally affect making decisions, namely, the economic, cultural, social, and personal ones. Small entrepreneurs in making decisions to take credit, are not only guided by their rationality, but also influenced by other factors such as intuition, politics, and ethics (Moeuf et al., 2018). Further socio-economic factors include net income, education, business areas, markets served, interest rates, loan ratios received, collateral, and business age. Yogyakarta city is a center of significant business activities in the province of DIY in Indonesia. The number of small businesses licensed in Yogyakarta city to which the questionnaires were provided was 237. The theoretical framework of this research is shown in Figure 1.

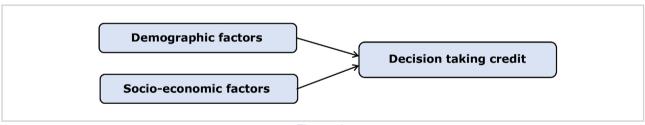


Figure 1:
Theoretical framework
Source: Compiled by the authors

This research is vital to do to know the factors that influence the decision to take credit by small entrepreneurs in the city of Yogyakarta.

This research is a quantitative study aimed at testing hypotheses. The researchers want to find the reasons of the small-scale entrepreneurs in the city of Yogyakarta to take bank credit (causal design). To find these reasons, we collect data only once for each unit of analysis (cross-sectional). This research analysis Unit is an organization. There are two types of data collected, namely, the primary and secondary one. The primary data was collected using questionnaires. The secondary data was obtained from the Department of Industry and Trade of the Special Region of Yogyakarta in 2022. The participants of the research are the owners and managers of small businesses in the city of Yogyakarta. This research was conducted in 7 sub-districts: Kraton, Mantrijeron, Kotagede, Umbulharjo, Tegalrejo, Wirobrajan, and Mergangsan. The industrial sectors under study were:

- 1) General Crafts;
- 2) Chemical & Building Materials;
- 3) Metal & Electronics;
- 4) Food & Baverages;
- 5) Leather & Clothing.

Out of 237 small business units from five industries, the number of complete samples as much as 130 were obtained. Each of the sampling fields is selected randomly according to their proportions. This research instrument is a questionnaire. A questionnaire is a condition by which a small business manager elected. The questionnaire contains the demographic variable statements include: age, gender; marital status; the number of family members and socio-economic variables include: revenue; education, industry; markets served; interest rate; loan ratios are accepted, and collateral variable measurements are outlined in Table 1.

To determine the factors influencing the decision to take credit by a small business we used a logit regression model with a qualitative response to the dependent variable. The purpose of this model is to determine the probability of individuals in qualitative decisions to interpret the results as individual probabilities based on the factors considered and show that the chances of taking credit are higher for small businesses with high credit scores and good credit history. In this study, the qualitative response consisted of only two classes (binary logit). We use the cumulative distribution function (CDF) to ensure the value of probability values located between 0 and 1. Decision of the entrepreneurs to take credit or not take credit may be influenced by 11 independent variables.

Table 1: Independent variables' description and measurement

Variable	Measurement
Decision to take credit	1, if decided to take credit in the last 3 years and 0 if otherwise
Age (X1)	Age of entrepreneur, date, month and year of birth
Gender (X2)	1 if man, 0 if woman
Marital Status (X3)	1 if married, 0 if other
Number of family members (X4)	Number of family members covered
Sales Revenue (X5)	Sales revenue per month (in Rp)
Education level (X6)	Last Education
Industry (X7)	1) General Crafts, 2) Chemical & Building Materials, 3) Metal & Electronics,
	4) Food & Baverages, 5) Leather & Clothing
Market served (X8)	1 if the Yogyakarta city market, 0 if other
Interest rate (X9)	The interest rate charged by the bank, in percentage
Collateral (X10)	1 if requested by the bank, 0 if not
Debt ratio (X11)	1 if the proposed total credits are given full, 0 if otherwise

Source: Compiled by the authors

### 3. Results

Data analysis focuses on identifying factors that influence the decision to take credit by small entrepreneurs. The questionnaire was received back and complete by 130 respondents. The average response rate for a study utilizing individual data is 52.7 percent, with a standard deviation of 20.4, whereas a survey using organization data was 35.7 percent with standard deviation from 18.8. The response rate of this study meets the standard because it is higher than 35.7 percent. Table 2 shows the descriptive statistics of respondents.

Based on results obtained in Table 3, the value of Nagelkerke R Square is 0.359, which means the variability of dependent variables can be explained by the variability of independent variables of 35.9%. In comparison, 64.1% are described by other factors outside the researched factors.

The research explains that the logit-used regression model is fit. This fact is supported by the calculation of Table 4 and Table 5.

Table 4 shows the value -2 Log-likelihood step 0 using constants (c) is 178.224, and Table 5 value -2 Log-likelihood step 1 using 11 independent variables, the value of -2 Log Likelihood is 137.758. By comparing two values-2 Log-Likelihood, there is a decrease in the value when the independent variable is inserted in the analysis, i.e. 178.224 - 137.758 = 41.07, this decline is more significant than the chi-square table = 19.675. Since 41.07 > 19.675. It can be said that the -2LogL drop difference is substantial. Thus, it can be said that the model is feasible for this research. The value of Chi-square Hosmer reinforced the invention and Lemeshow Goodness of fit of 11.673 with significance 0.166 > 0.05 in Table 6.

This means the empirical data is equal to the model, or it can be said the model is fit. The percentage accuracy of the model in classifying observations is 70.8% shown in Table 7.

Table 2: **Descriptive statistics** 

Description	Result	Total	Percentage	
Gender	Male	95	73.08%	
Genuer	Female	35	26.92%	
	18-28	0	0%	
Age	29-39	15	11.54%	
	> 40	115	88.46%	
Assital Chatus	Married	126	96.92%	
larital Status	Other	4	3.08%	
lumbar of family	2 people	14	10.77%	
Number of family members	3-5 people	104	81.54%	
nembers	> 5 people	10	7.69%	
Sales Revenue	25-40 million Rp	95 35 0 15 115 126 4 14 104 100 118 12 0 24 01 15 1 16 1 164 9	90.77%	
	40-100 million Rp	12	9.23%	
	> 100-200 million Rp	0	0%	
Education level	Elementary school	24	18.46%	
	First-level secondary school	15	11.54%	
	High level advanced school	64	49.23%	
	University	9	6.92%	
	Scholar	18	13.85%	
Industry (business field)	General Crafts	44	33.85%	
	Chemical & Building Materials	3	2.31%	
	Metal & Electronics	14	10.77%	
	Food & Beverages	54	41.54%	
	Leather & Clothing	15	11.54%	
he market served	Yogyakarta	101	77.69%	
The market served	Out of Yogyakarta	29	22.31%	
Interest rate	5.00% - 9.99%	104	80.00%	
	10.00% - 14.99%	2	16.15%	
	15.00 % - 19.99%	3	2.31%	
	> 20%	2	1.54%	
Collateral	The Bank asks	115	88.46%	
	The Bank does not ask	15	11.54%	
Debt ratio	Full credit	73	56.15%	
	Credit is not full	57	43.85%	

Source: Compiled by the authors

Table 3:

# Value of Nagelkerke R Square

Model Summary							
Step	Step -2 Log likelihood Cox & Snell R Square Nagelkerke R Square						
1	137.758ª	0.268	0.359				

Source: Compiled by the authors

## Table 4:

### **Test an Overall Fit model with constants**

Iteration History							
Iteration -2 Log likelihood Coefficients							
		_	Constant				
	1	178.244	246				
Step 0	2	178.244	247				
	3	178.244	247				

Source: Compiled by the authors

### Table 5:

# Overall fit model test with all independent variables

Iteratio	n	-2 Log	Coefficients											
		likelihood	Constant	X1	X2	Х3	X4	X5	Х6	X7	X8	Х9	X10	X11
	1	140.141	824	.732	867	-1.307	.213	.282	.412	264	.932	277	-1.052	394
	2	137.831	493	.889	-1.087	-2.095	.308	.424	.522	349	1.200	360	-1.455	503
Step 1	3	137.758	305	.906	-1.117	-2.346	.338	.455	.542	365	1.250	373	-1.546	524
	4	137.758	293	.906	-1.118	-2.360	.339	.455	.543	366	1.252	374	-1.550	525
	5	137.758	293	.906	-1.118	-2.360	.339	.455	.543	366	1.252	374	-1.550	525

Source: Compiled by the authors

### Table 6:

### **Chi-square calculations Hosmer and Lemeshow Test**

Step	Chi-square	df	Sig.
1	11.673	8	0.166

Source: Compiled by the authors

Based on Table 8, it is known that the factors influencing the decision to take credit, small entrepreneurs are gender, education, the business sector (industry), market served, and collateral.

Table 7: **Prediction accuracy Model based on observation classification** 

			Predicted				
	Observed		Decision to	% Correct			
	Observed			1.00	% Correct		
	Step 1 Decision to take credit		56	17	76.7		
Step 1			21	36	63.2		
	Overall Percentage				70.8		

Source: Compiled by the authors

Table 8: The Logistic Regression results

Va	riable	В	S.E.	Wald	df	Sig.	Exp(B)
	X1	0.906	0.692	1.714	1	0.190	2.474
	X2	-1.118	0.507	4.855	1	0.028	0.327
	X3	-2.360	1.492	2.500	1	0.114	0.094
	X4	0.339	0.509	0.443	1	0.506	1.404
	X5	0.455	0.756	0.362	1	0.547	1.577
Cton 18	X6	0.543	0.186	8.562	1	0.003	1.721
Step 1ª	X7	366	0.153	5.699	1	0.017	0.694
	X8	1.252	0.548	5.233	1	0.022	3.499
	X9	374	0.409	0.837	1	0.360	0.688
	X10	-1.550	0.766	4.094	1	0.043	0.212
	X11	525	0.438	1.437	1	0.231	0.592
	Constant	293	3.011	0.009	1	0.923	0.746

Source: Compiled by the authors

### 4. Discussion

Gender is one of the demographic factors influencing credit decision making. If a small entrepreneur is a man, he tends to decide to take credit. This study implies that if the small entrepreneur is a female, it tends not to or delay deciding on taking credit. A study conducted in India showed that companies whose holdings of men had higher odds compared to companies whose owners were women to acquire loans (Chaudhuri et al., 2020). Male tend to dare to take risks based on optimistic estimates (Chienwattanasook et al., 2019). Gender, the level of income and religion adopted is not identified as a significant predictor of decision making (Spicka, 2020). Research in Western Australian states that women who generally avoid the risk and/or desire to maintain control may deliberately choose not to seek external funding. Age, gender, education, household size, number of employees, company age, distance to source, income and wealth joint influence on the decision of entrepreneurs taking credit in Wa Municipality Ghana (Chaudhuri et al., 2020). Individual ethnic and gender backgrounds can determine small entrepreneurs in Vietnam to establish their business financing decisions (Nguyen & Canh, 2020). Proportionally, small businessowned women with high growth allow them to finance their businesses with personal capital and outside funds (Yacus et al., 2019).

Entrepreneurs with higher levels of education tend to decide to take credit boldly. Highly educated entrepreneurs conduct more rational and objective business analysis by being based on more comprehensive knowledge. Entrepreneurs with lower education levels are less comprehensive in conducting analyses so that a relatively less courageous decision is to take credit for fear of his judgment wrong. In particular, the education level of small and medium-sized business owners in the U.S. is a determining factor in banks' bargaining power to obtain loans (Moeuf et al., 2018). In Ghana, small entrepreneurs are generally undereducated, so they are difficult to access credit from formal institutions such as banks (de Sousa Jabbour et al., 2020).

The market area served affects credit decisions. Entrepreneurs who serve the market outside of Yogyakarta tend to take credit, but if local markets of Yogyakarta tend to take no credit or delay taking loans. Entrepreneurs serving the market outside of Yogyakarta need more significant investment because the coverage is higher risk and has a different character that requires a more substantial investment. Banks and small and medium-sized entrepreneurs argue that the significant factors affecting the perception of risk are: new business size, sectors of economic activity, entrepreneurial experience and corporate market location. Yogyakarta outside the market is a

riskier market than Yogyakarta's local market; therefore, small and medium scale businesses tend not to take credit.

Collateral is one of the requirements requested by the Bank to give credit. Small entrepreneurs must provide collateral to be handed over to the Bank. Collateral is an asset owned or legally usable. Collateral is an obstacle for small entrepreneurs to ask for credits because of the absence of assets. However, firms can boost credit by collateralizing productive assets (PAs). In this case, before extending credit, lenders consider the expected profitability of the borrowing firm and the resale value of collateralized PAs, which can be seized and liquidated if firms are in distress (Sumadi et al., 2020). Formal lenders have limited information on small-scale enterprises that become clients, therefore need collateral to address moral hazards and decisions that may be detrimental in credit transactions (Ahmad et al., 2019). Size, age, availability of collateral, the presence of initial capital, current capital status, interest rates, business plan, skills, education, relations with financial institutions and the ability to manage loan funds influence the decision to take credit (Mukhametzhan et al., 2020). At Visegrad countries (Czech Republic, Slovak Republic, Poland and Hungary), we also find evidence that firms owned by female borrowers are more likely to pledge collateral than male-owned firms (Rahman et al., 2017). One of the reasons small-scale companies are struggling to access funds from banks is lack of collateral (Caselli et al., 2019). In Malaysia, the imperfections of financial markets result in some small-scale enterprises experiencing barriers to access loans because they have no capital, collateral and credit history (Chaudhuri et al., 2020).

Each industry group requires a credit decision with different considerations. General handicraft business, chemical & building materials, metal & electronics, food management and clothing & leather have a different character. Industries with credit attachment over a more extended period will lower the credit demand because the risk of credit is not paid higher. Overall, the study finds that firms in the manufacturing industry have a significantly higher probability of obtaining external financing, confirming (Caselli et al., 2019). The firms in manufacturing sectors use more bank loan financing and obtain long-term debt more easily, due to lower information asymmetries (Chienwattanasook et al., 2019). Small companies of manufacturing sector need more funds than other industries, but the operation is not maximal because of its limited financial structure (Caselli et al., 2019).

### 5. Conclusion

From this research concluded that influencing the decision to take credit by small entrepreneurs is a demographic factor of gender, and the socio-economic factors include education, the business sector (industry), market served and collateral. Women entrepreneurs tend not to take credit for financing their operations or investments, and otherwise, male entrepreneurs take credit for the same thing. High level of education of small entrepreneurs is increasingly likely to take credit compared with the lower educated. If the market served outside of Yogyakarta, entrepreneurs would take credit, but if it is the market of Yogyakarta city, then entrepreneurs tend not to receive credit. Entrepreneurs choose not to take the credit if the bank asks for collateral, but will receive credit if the bank does not solicit collateral. The industry with a long-term bonding of funds encourages entrepreneurs not to take credit; otherwise, entrepreneurs will receive credit.

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