



# INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES



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To Link this Article: <http://dx.doi.org/10.6007/IJARBSS/v11-i11/11112> DOI:10.6007/IJARBSS/v11-i11/11112

**Received:** 04 September 2021, **Revised:** 30 September 2021, **Accepted:** 17 October 2021

**Published Online:** 11 November 2021

**In-Text Citation:** (Ruslan et al., 2021)

**To Cite this Article:** Ruslan, R. A. H. M., Gan, C., & Hu, B. (2021). Determinants of Small and Medium Enterprises' Choice of Microcredit Provider: A Multinomial Logit Approach. *International Journal of Academic Research in Business and Social Sciences*, 11(11), 673 – 685.

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Vol. 11, No. 11, 2021, Pg. 673 – 685

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[www.hrmar.com](http://www.hrmar.com)

ISSN: 2222-6990

## Determinants of Small and Medium Enterprises' Choice of Microcredit Provider: A Multinomial Logit Approach

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### Abstract

Over the past decade, the contribution and the role of SMEs has been clearly acknowledged as the backbone of economic growth in Malaysia. As SMEs contribute towards economic growth, the SME development has had increased interest from policymakers and has been placed high on the government development agenda. The involvement of the banking institutions in the microfinance industry is significant in ensuring financial inclusion by providing microcredit to SMEs. Accordingly, SMEs have many choices of microcredit providers, and recognising the factors that influence the choice of providers is vital to understand SMEs' performance better. This paper investigated three choices of microcredit providers in Malaysia: microfinance institutions, commercial banks, and development financial institutions and the behaviour influences of small to medium enterprises (SMEs) microcredit borrowers. A multinomial logit (MNL) regression was utilised to investigate the microcredit provider chosen by SMEs, and empirical findings indicate that different loaning features of microcredit providers like credit amount, location of the provider, loan handling, the duration of loan, and method of interest payment significantly influence the demand of microcredit among SMEs. Understanding the various microcredit provider preferences among SMEs' will support policymakers and microcredit providers to increase financial presence and the growth of SMEs, leading to a boost in the nation's economy.

**Keywords:** Determinants, Choice, Microcredit, Microfinance, Multinomial, SME.

## Introduction

Microcredit is a common source of financing for 'unbankable' people (Muridan & Ibrahim, 2016). Microcredit enables underprivileged individuals to become self-sufficient through entrepreneurial activities. Thus, microfinance is considered a financial cushion for the poor to help them generate income, accrue wealth, and improve financial wellbeing (Littlefield et al., 2003). Several countries in Asia and Europe have established microcredit schemes to aid the underprivileged to establish micro, small, and medium enterprises and reduce poverty (Wahab et al., 2014). Furthermore, small amounts of credit lent have been shown to help generate growth, expand, new product development, hire new personnel, and improve SMEs' operation facilities (Khandker, 2005; Mead & Liedholm, 1998; Woller & Parsons, 2002).

The Amanah Ikhtiar Malaysia (AIM) microcredit programme was established in 1986 to decrease rural poverty in North-West Selangor through microfinancing of businesses. The project was successful (Gibbons & Kasim, 1990) and has become the leading microfinance institution (MFI) in Malaysia that promotes small loan opportunities for SMEs. SMEs are recognised as the driver of economic progress in Malaysia (SME Corporation Malaysia, 2015). Consequently, providing SMEs with official loan admissions can help boost income generated, further contributing to the nation's economy. Thus, the Malaysian government aids loan accrual through various governmental departments, organisations, and agencies due to the resources to reach a more significant number of SMEs. Accordingly, SMEs have many choices of microcredit providers, and recognising the factors that influence the choice of providers is vital to understand SMEs' behaviour better. This study will help devise practical guidelines to expand the microfinancing industry in Malaysia sustainably.

## Literature Review

The Microfinance Institutional Framework was devised in August 2006 by the Bank Negara Malaysia (BNM) to encourage investment organisations to promote microcredit aid to SMEs. SMEs now have various microcredit financing options, and the drivers that influence the choice of providers in Malaysia must be studied. Conversely, microcredit providers face difficulties attracting SMEs to apply for microcredit financing even with the flexible lending measures (Mokhtar & Ashhari, 2015). According to Nawai and Shariff (2011), the flexible lending measures placed by credit providers enable SMEs to obtain loans with uncomplicated prerequisites such as no warranty requirement, limited documentation, and a shorter loan approval and payout period.

The decision-making process to select a microcredit provider is influenced by the features provided by the financial institution, the loan requirements, the relationship between provider and borrower, and the location of the financial institution. Consequently, microcredit providers have addressed these financial considerations by adopting various business strategies to attract SMEs (Tuyon et al., 2011).

According to the SME Corporation Malaysia report (2014), the limited financial aid given by microfinance institutions (MFIs) has caused rapidly growing SMEs to prefer commercial banks and development financial institutions (DFIs) when accruing financing. Moreover, rapidly growing SMEs need sizeable financial aid to meet their organisational needs to obtain investment and assets; thus, microloans given by MFI are inadequate (Hassan et al., 2013; Presbitero & Rabellotti, 2014).

A positive relationship between loan providers and potential borrowers<sup>1</sup> is essential as borrowers will be more inclined to obtain microfinancial aid from their network and choose providers that offer financial add-ons like a savings account (Tuyon et al., 2011). Therefore, commercial banks or DFIs are preferred over MFIs that cannot offer saving accounts (Li & Rouyih, 2007). Conversely, there is limited empirical knowledge on the factors that affect the selection of microcredit providers. Hence, the aspects that influence the behaviour of SMEs in selecting microcredit providers must be investigated to devise a comprehensive guideline to improve the sustainable growth of the microfinance industry in Malaysia.

### Methodology

This paper utilised primary data obtained through a survey distributed to 386 SMEs. The SMEs' choice between the three microcredit providers (microfinance institutions, commercial banks, and development financial banks) was evaluated using the MNL approach, and all the providers were assumed to be mutually exclusive. The microfinance institution was used as a yardstick against the other choices. The various microcredit providers were classified as dependent variables ( $j = 1, 2, 3$ ) representing microfinance institutions, commercial banks, or DFIs, respectively. These numerical values were randomly assigned, and the descriptive variable  $x_i$  is the likelihood of an SME  $i$  choosing an alternative microcredit provider ( $j = 1, 2, 3$ ) (Hill et al. 2011, pp. 600):

$$p_{i1} = \frac{1}{1 + \exp(\beta_{12} + \beta_{22}x_i) + \exp(\beta_{13} + \beta_{23}x_i)}, j=1 \quad (1)$$

$$p_{i2} = \frac{\exp(\beta_{12} + \beta_{22}x_i)}{1 + \exp(\beta_{12} + \beta_{22}x_i) + \exp(\beta_{13} + \beta_{23}x_i)}, j=2 \quad (2)$$

$$p_{i3} = \frac{\exp(\beta_{13} + \beta_{23}x_i)}{1 + \exp(\beta_{12} + \beta_{22}x_i) + \exp(\beta_{13} + \beta_{23}x_i)}, j=3 \quad (3)$$

The variables were not specified as relative likelihoods were observed. Therefore, parameters that define the three options were set. Firstly, a base group was utilised to compare the performance against alternative financial providers by setting  $j = 1$  to zero. Furthermore, variables  $\beta_{12}$  and  $\beta_{22}$  were used as the second alternative and variables  $\beta_{13}$  and  $\beta_{23}$  were used in the third alternative.

Assuming that the likelihood of SME  $i$  choosing choice  $j$  was conditional to the features ( $x_{ij}$ ), the formula was described as (Hill et al., 2011):

$$P_{ij} = \frac{\exp(\beta_{ij}X_{ij})}{\sum_{k=1}^3 \exp(\beta_{ik}X_{ij})} \quad j=1, 2, 3 \quad (4)$$

The log likelihood function for the MNL was described as:

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The study uses the term borrowers instead of customers as there is no distinction between Islamic and regular microcredit funding.

$$l = \sum_{i=1}^n \sum_{j=1}^k y_{ij} \text{Log}(P_{ij}) \tag{5}$$

Where  $y_{ij}$  is a mock variable that specifies the choice taken by SME  $i$ . If choice 1 was selected, then  $y_{i1} = 1$ ,  $y_{i2} = 0$ , and  $y_{i3} = 0$ . If choice 2 was selected, then  $y_{i1} = 0$ ,  $y_{i2} = 1$ , and  $y_{i3} = 0$ . The MNL model was also described as the Relative Risk Ratio (RRR) or occurrence probability of choosing  $j$  against the base category:

$$\frac{P(y_i = j)}{P(y_i = 1)} = \frac{p_{ij}}{p_{i1}} = \exp(\beta_{1j} + \beta_{2_{jxi}}), j = 2,3 \tag{6}$$

The outcome of changing the probability ratio of  $X_i$  can be postulated as (Hill et al., 2011):

$$\frac{\partial(p_{ij} / p_{i1})}{\partial x_i} = \beta_{2_j} \exp(\beta_{1j} + \beta_{2_{jxi}}), j = 2,3 \tag{7}$$

The exponential function  $\exp(\beta_{1j} + \beta_{2_{jxi}})$  was constantly positive. Therefore, the variable  $\beta_{2_j}$  indicated that microfinance institutions were less likely to be the first category ( $j = 1$ ). The description of variables was summarised in Table 1.

**Table 1 Variables Description**

Variable Name	Definitions/Measurement
Gender	The gender of the SME owner/manager was defined as $X_1 = 1$ for Male or 0 = Female
Age	The age of the SME owner/manager was defined as: $X_2(1) = 1$ if below 35 years old or 0 if otherwise $X_2(2) = 1$ if 36-45 years old or 0 if otherwise $X_2(3) = 1$ if 46 years old and above or 0 if otherwise
Married	The marital status of the SME owner/manager was defined as: $X_3(1) = 1$ if married or 0 if not
Ethnicity	The ethnicity of the SME owner/manager was defined as $X_4 = 1$ if Malay or 0 if not
Age of Enterprise	The age of the enterprise was defined as $X_5 =$ age of the firm based on the duration of establishment
Sector	The industry of the SME was defined as: $X_6(1) = 1$ firm is in manufacturing or 0 if otherwise $X_6(2) = 1$ firm is in service or 0 if otherwise $X_6(3) = 1$ firm is in agriculture or 0 if otherwise
Size of Enterprise	The size of the SME was based on the total number of personnel in 2014 ( $X_7 =$ size of the firm)
Ownership	The ownership of the SME was categorised as $X_8 = 1$ if the firm has a sole proprietor or 0 if otherwise
Loan Amount	The loan amount that SMEs borrowed at a time was defined as: $X_9 = 1$ if borrowed over RM25, 000 or 0 if otherwise
Loan Process	The process of the loan was categorised as:

Variable Name	Definitions/Measurement
	$X_{10} = 1$ if it takes a month to process or 0 if otherwise
Loan Duration	The loan period for the largest credit taken by the SME was defined as: $X_{11}(1) = 1$ for a short-term loan or 0 if not $X_{11}(2) = 1$ for a medium-term loan, 0 if not $X_{11}(3) = 1$ for a long-term loan, 0 if not
Method of Interest Payment	The interest payment method was defined as $X_{12} = 1$ if interest payment mode is monthly or 0 if otherwise
Networking	The relationship between SMEs and the microcredit providers ( $X_{13}$ ) were defined from where 0 for 'Not at all' to 5 'very extensive'
Distance	The distance between the SME and the provider was defined as $X_{14}$ = the distance in kilometres

## Results and Discussion

### Descriptive Statistics

The descriptive information of the 386 respondents from various SMEs is given in Table 2. The result indicates that most SME owners/managers were married Malays between 46 to 55 years old. Additionally, most SMEs had been operating for 10 to 14 years as sole proprietors in the service industry.

**Table 2 Profile of the SME Owner-Managers and Characteristics of SMEs**

Variable Name	Description	Frequency	Percentage (%)
Age	Below 35 years old	43	11.1%
	36-45 years old	142	36.8%
	46-55 years old	157	40.7%
	Above 55 years old	44	11.4%
	Total	386	100.0%
Marital Status	Single	10	2.6%
	Married	369	95.6%
	Divorce	7	1.8%
	Total	386	100.0%
Ethnicity	Malays	306	79.3%
	Chinese	63	16.3%
	Indian	16	4.1%
	Kadazan	1	0.3%
	Total	386	100.0%
Age of Enterprise	Less than 5 years	35	9.1%
	5 to 9 years	96	24.9%
	10 to 14 years	161	41.7%
	15 to 19 years	66	17.1%
	More than 20 years	28	7.3%
	Total	386	100.0%
	Household business establishment	9	2.3%



Variable Name	Description	Frequency	Percentage (%)
Types of Ownership	Sole proprietorship	341	88.3%
	Collective/ cooperative	3	0.8%
	Limited liability company	33	8.5%
	Total	386	100.0%
Sector	Manufacturing	102	26.4%
	Service	245	63.5%
	Agriculture	39	10.1%
	Total	386	100.0%

#### Perceptions in Choosing Microcredit Providers

The comments received from survey respondents on the factors that influence the selection of credit providers were analysed using the five-point Likert scale ranging from 'strongly disagree' (1) to 'strongly agree' (5). The items' mean score ranged from 4.31 to 4.50 while the standard deviation ranged from 0.564 to 0.819 (Table 3).

According to the study carried out by Tsukada et al. (2010), the need for collateral is a critical factor that influences loan decision making. Based on the results obtained, the 'No collateral required' category displayed the highest mean score (4.48), indicating that SMEs are more likely to obtain a loan from credit providers that do not necessitate collateral. In addition, the respondents established that selection of depends microcredit providers depends on the characteristics of the loan offered like improved lending conditions (mean score 4.50), more straightforward lending procedures (mean score 4.45), instant loan processing (mean score 4.41), and lower interest rates (mean score 4.31).

Similarly, Nkundabanyanga et al. (2014) established that favourable loaning conditions significantly influenced the demand for loans. The results also indicate that respondents valued 'having a borrower relationship with the creditor' (mean score 4.35) as an essential factor in selecting creditors as this may lead to creditors providing additional information on the credit requirements. Moreover, Bougheas et al. (2006) and Nguyen & Luu (2013) postulated that a positive networking relationship between borrowers and credit providers is key to accessing credit.

**Table 3 Summary of Respondents Selecting Credit Providers**

<b>Factors in Choosing Credit</b>	<b>Frequ ency (N= 386)</b>	<b>Percent age (%)</b>	<b>Me an</b>	<b>S.D</b>	<b>Factors in Choosing Creditors</b>	<b>Frequ ency (N = 386)</b>	<b>Percent age (%)</b>	<b>Me an</b>	<b>S. D</b>
<b>No Collateral Required</b>					<b>Having a Borrowing Relationship with the Creditor</b>				
Strongly disagree	11	2.8	4.4	0.8	Strongly disagree	8	2.1	4.3	0.7
Disagree	0	0.0	8	19	Disagree	1	0.3	5	4
Neutral	15	3.9			Neutral	10	2.6		
Agree	124	32.1			Agree	196	50.8		
Strongly agree	236	61.2			Strongly agree	171	44.2		
<b>Lower Interest Rate</b>					<b>No/less Complicated Lending Procedure</b>				
Strongly disagree	12	3.1	4.3	0.8	Strongly disagree	0	0	4.4	0.5
Disagree	0	0.0	1	18	Disagree	0	0	5	75
Neutral	16	4.1			Neutral	16	4.1		
Agree	188	48.7			Agree	182	47.2		
Strongly agree	177	44.1			Strongly agree	188	48.7		
<b>Immediate Loan Release/Faster Processing</b>					<b>Better Lending Terms</b>				
Strongly disagree	1	0.3	4.4	0.5	Strongly disagree	0	0	4.5	0.5
Disagree	0	0.0	1	89	Disagree	0	0	0	64
Neutral	14	3.6			Neutral	13	3.4		
Agree	194	50.2			Agree	165	42.7		
Strongly agree	177	45.9			Strongly agree	208	53.9		

*Empirical Results*

The explanatory variables were tested using the Variance Inflation Factor (VIF) and Breusch-Pagan analysis to determine the presence of multicollinearity and heteroscedasticity in the MNL model (Table 4).



**Table 4 Test for Multicollinearity and Heteroscedasticity**

Mean VIF of Multicollinearity	1.78(< 10)
Breusch Pagan/Cook-Weisberg (BP/CW)	6.63 (0.9929)

Note 1) A VIF of 10 or greater indicates the presence of multicollinearity.  
 2) Numbers in parentheses are the probability > chi<sup>2</sup> for BP/CW test

The results in Table 4 indicated no multicollinearity and heteroscedasticity present in the study. The results of the MNL for SMEs in Malaysia are shown in Table 5. Despite the similar microcredit schemes offered, SMEs established longer are more likely to obtain credit from commercial banks than MFIs. Conversely, the SME Corporation Malaysia (2014) indicated that commercial banks are more willing to provide credit to SMEs with tremendous growth and collateral.

Additionally, it was observed that SMEs involved in the service industry are 3.06 times more likely to obtain loans from MFIs compared to DFIs. DFIs are preferred because of engagement in service projects such as the Special Tourism Fund introduced by the SME bank that provides financial aid to businesses in the service industry. The involvement in service projects increases the popularity and infrastructure of DFIs that leads to a competitive advantage over other credit providers.

SMEs that are requesting a large sum of credit (more than RM 25 000) have a higher likelihood of obtaining loans from commercial banks that has a maximum financing limit (RM 50 000) compared to MFIs (RM 25 000). Microcredit programmes like I-Wibawa and I-Sejahtera have a maximum credit amount (RM 10 000) that deters many SMEs from applying. Moreover, smaller SMEs cannot obtain large loans from MFIs and opt for commercial banks (Dalberg, 2011).

The loan duration significantly influences the choice between commercial banks and MFIs. SMEs that intend to obtain credit over an extended period are 3.26 times more likely to borrow from commercial banks and 4.01 times more likely to borrow from DFIs than MFIs. MFIs are not preferred when obtaining loans over a long period due to the limited capital capabilities of MFIs compared to larger capital bases of commercial banks and DFIs.

Additionally, the method of credit repayment significantly influences the choice of the credit provider. SMEs that borrow credit from MFIs like AIM and Yayasan Usaha Maju (YUM) must pay weekly interests (Abd Rahman et al., 2008), which causes financial burden and anxiety to debtors. Consequently, financial schemes offered by commercial banks that employ a lesser frequency of payment are a viable alternative. According to Field et al (2012), a reduced number of payments allows borrowers to utilise the credit sensibly to favour lucrative investment opportunities to grow their business.

The relationship between the credit provider and SMEs was insignificant and showed no influence on the factors that influence the choice of the credit provider. The study also determined that SMEs are inclined to obtain credit from MFIs than commercial banks and DFIs further away. The likelihood of selecting a commercial bank as the credit provider

reduces by 8% due to a decrease in proximity. The locations of commercial banks centred in cities and are less accessible compared to MFIs like AIM

**Table 0 MNL Evaluation for SMEs' Choice of Microcredit Providers in Malaysia**

<b>No. of Observations</b>		<b>386</b>				
<b>Log Likelihood</b>		<b>-350.190</b>				
<b>Chi2(36)</b>		<b>145.170</b>				
<b>Pseudo R2</b>		<b>0.1720</b>				
<b>Variables</b>	<b>(1)</b>			<b>(2)</b>		
	<b>Commercial Banks vs Microfinance Institutions</b>			<b>Development Financial Banks vs Microfinance Institutions</b>		
	<b>Coefficient</b>	<b>RRR</b>	<b>SE</b>	<b>Coefficient</b>	<b>RRR</b>	<b>SE</b>
<b>Owner/Manager Characteristics</b>						
Gender	0.526	1.692	0.341	0.246	1.279	0.356
Age (2)	-0.492	0.611	0.438	-0.254	0.776	0.523
Age (3)	-0.342	0.710	0.529	0.440	1.552	0.612
Marital status	0.333	1.395	0.545	0.038	1.038	0.609
Ethnic	-0.265	0.767	0.330	0.060	1.062	0.380
<b>SMEs Characteristics</b>						
Age of enterprise	0.061*	1.063	0.034	0.022	1.023	0.038
Ownership	0.697	2.008	0.478	0.512	1.668	0.478
Manufacturing	-0.327	0.721	0.513	0.724	2.062	0.612
Service	0.069	1.071	0.477	1.119**	3.063	0.583
Sized of enterprise	-0.064	0.938	0.051	-0.020	0.980	0.052
<b>Loan Characteristics</b>						
Size of loan	1.135***	0.321	0.429	-0.558	0.572	0.503
Loan process	-0.055	0.946	0.358	-0.561	0.571	0.429
Short-term	-0.310	0.733	0.403	0.026	1.026	0.492
Long-term	1.180***	3.255	0.354	2.640***	4.013	0.370
Monthly paid	2.429***	11.352	0.854	1.330	3.782	0.761
<b>Networking</b>						
Commercial bank	0.006	1.006	0.095	0.005	1.005	0.100
MFI	-0.056	0.945	0.080	0.124	1.132	0.088
<b>Distance in Kilometres</b>						
	-0.026*	0.975	0.015	-0.029*	0.971	0.017

Note: 1) Estimates are presented in the RRR.

2) \*, \*\* and\*\*\*, represent 10%, 5%, and 1% significance levels, respectively.

which are located in rural areas in Malaysia, is a pivotal factor in selecting the credit provider. Distance affects the choice of a credit provider as the high costs of travel (Khan & Rabbani, 2015), time spent, and business opportunities (Li et al., 2011a) missed are a liability to SMEs. Furthermore, Boucher et al. (2009) and Winter-Nelson and Temu (2005) elucidated that the proximity of creditors to SMEs will make monthly credit transactions and payments more manageable and reduces travel expenditure.

### Conclusion

The MNL model estimates the reasons for choosing different microcredit providers, such as microfinance institutions, commercial banks, and DFIs in SMEs. MFIs are the yardstick used to compare against other choices. The empirical evidence in this study provides insightful information especially on factors that influence SMEs' selection of microcredit providers. Our findings revealed the socio-demographic backgrounds of the owner/manager were less critical in determining SMEs' selection of microcredit providers. Conversely, the various loaning features employed by microcredit providers play a vital role in determining the need for microcredit among SMEs.

Understanding the various microcredit provider preferences among SMEs' will support policymakers and microcredit providers to increase financial presence and enhance the growth of SMEs, leading to a boost in the nation's economic growth. However, our theoretical framework excludes some credit elements from the analysis, and future studies should consider other credit features such as interest rate, type of loans, and group or individual lending behaviours. Additionally, this research will also be valuable for evaluating the stratifications of SMEs located in urban, small towns or rural areas to capture which type of microcredit provider is more beneficial across different strata of SMEs. SMEs located in metropolitan areas may have different preferences towards microcredit provider than those in rural areas.

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