

The Probability of the Financing Sustainability of Micro-firms Supported by Islamic Social Fund

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Abstract

This study aims to identify factors that influence financing sustainability, thereby determining the probability of attaining the subsequent financing from Islamic social funds. Islamic social funds provide funding for micro-firms using a financing scheme that differs from conventional financing terms. For the lower level, Islamic social funds usually offer a limited amount of no-cost financing called qard. In contrast, for more profitable micro-firms, Islamic social funds provide low-cost financing called murabahah. However, most micro-firms need financing in sustainable terms, either using a qard scheme or a murabahah scheme. We assume that only micro-firms showing business growth may generate higher financing using the murabahah scheme. We use data from 1,346 micro-firms. We found several factors that contribute significantly to a micro-firm having a higher chance of generating further funding, such as group-type financing, amount of funding (plafond), time to maturity, and demographic aspects such as age and number of dependents. However, we found that the initial contract scheme (whether qard or murabahah) does not relate to the chance of eligibility for further financing.

Keywords:

financing sustainability; business growth; microfinance; Islamic social fund; murabahah scheme; mudharabah scheme

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INTRODUCTION

Alleviate poverty is crucial since poverty is the greatest moral challenge of many countries. About three billion people are still trapped in poverty (Obaidullah, 2008). Financial institutions have been acknowledged as tools to alleviate poverty recently. People who have limitations in job choice commonly expand their possibilities by becoming micro-business actors (Fiala, 2018).

Unfortunately, pre-prosperous societies are generally non-bankable societies. People in such societies do not have bank loans since it is hard to fulfill their collateral requirements (Dalimunthe et al., 2019). Thus, micro-firms need a specific policy rather than the standard loan requirements of formal financial institutions.

Islamic banks are expected to carry a social mission to reduce poverty, especially in Muslim countries. However, Islamic banks to fulfill this expectation faced with many constraints stemming from the banking industry environment, such as high administrative costs and the lack of collateral (Obaidullah, 2008), high asymmetric information (Dalimunthe et al., 2019), the need to reach high performance and soundness (Al Arif et al., 2020), and disparities in economic growth in areas where Islamic banks operate (Mufraini et al., 2020).

Among poverty alleviation programs adopted recently is economic empowerment through micro-business financing or micro-financing (Fitriasari & Dalimunthe, 2019). Microfinance is an economic development approach that benefits low-income people who run businesses. The concept of microfinance was introduced by Muhammad Yunus, who founded the Grameen Bank in Bangladesh. Currently, microfinance institutions are non-negligible financial intermediaries in less developed countries' financial systems and emerging economies (Soumaré, Tchuigoua, & Hessou, 2020). El-Komi and Croson (2013) show that microfinance can significantly reduce poverty.

Microfinance programs can serve the financial needs of micro-business actors to continue to operate. A business run at the micro-level offers additional income to supplement one's earnings (Hassan and Saleem, 2017; Fianto et al., 2018; Fajarini et al., 2021). The path of micro-empowerment offers a significant positive change in poverty alleviation (Coulbaly et al., 2018). Microfinance creates opportunities to strive individually (Verrest, 2013) and is a helpful instrument for new entrepreneurs (Arbolino et al., 2018). Microfinancing encourages pre-prosperous communities' empowerment (Weber and Ahmad, 2015; Fianto et al., 2018). Microfinance institutions' operations directly increased society's welfare by providing more entrepreneurial activities that ultimately enhanced economic growth (Abrar, Hasan & Kabir, 2020).

Islam is a religion in which providing social funds for alleviating poverty is a part of worship activity. Islamic social funds consist of zakat funds, infaq, and alms and are mainly collected by the zakah institutions. The allocation of Islamic social funds can partially overcome the lack of financing for micro-firm. A Zakat institution may have a variety of empowerment programs to channel productive funds. Indonesia is one country where zakat funds have been used to finance micro-firms. For example, Badan

Amil Zakat Nasional (BAZNAS), an Indonesian social institution that partners with the UN, formed a Baitul Qiradh, meaning that it is devoted to applying social funds for productive purposes, which is a microfinancing initiative (Ascarya, 2007; Obaidullah, 2008). Islamic social funds aim to alleviate poverty and improve the recipients' socio-economic welfare (Hassan & Saleem, 2017).

Obaidullah (2008) explains two broad categories of microfinancing models: social-based (non-profit) and commercial-based. The social-based model does not require compensation for the loan. It is financing with a qard contract, a virtue contract with zero interest rate (Salleh et al., 2014). For targets of pre-prosperous societies, ultra-micro entrepreneurs, or new businesses, a qard contract is appropriate (Obaidullah, 2008). According to Mustofa (2016), financing with qard contracts provides many benefits, including helping customers in times of trouble by providing short-term bailouts and supporting small traders to expand their business. Thus, a qard contract is a social mission for sharia-based financing institutions in assisting pre-prosperous clients.

On the other side is commercial-based financing - murabahah and ijara contract (Shaikh, 2017)-which require a margin over the principal loan repayments. Murabahah aims to *make a profit*. Murabahah is a kind of sale and purchase transaction. There are terms and essential financing elements with a murabahah agreement (Acharya, 2007). First, murabahah financing is not an interest-bearing loan. Murabahah financing is the buying and selling commodities at a substantial price that includes a profit margin above the mutually agreed cost. Secondly, murabahah is one form of buying and selling when the seller explicitly states the cost of goods sold and sold by adding the desired profit (margin). Thirdly, murabahah is declared valid when the cost of goods can be determined with certainty. Murabahah financing currently dominates the existing products in Islamic financial institutions (Muhamad, 2014).

Islamic microfinance programs can contribute to socio-economic factors. The Sharia financing approach involves developing micro-business through financial and non-financial assistance. Shariah micro-financing seeks to embrace people who experience financial exclusion, helping them obtain sustainable microfinance facilities as part of a vision of the prosperous welfare of society (Obaidullah, 2008). Theoretically, the Islamic approach in the financing or investment sector involves ethical and moral principles based on Islamic values of trust, honesty, and brotherhood. These dimensions lead to differences in characteristics vis-à-vis conventional lenders (Al-Harran, 2014). Transactions are about how to make a profit and how to empower the community.

The Islamic social fund should produce healthy and prosperous funding, characterized by a reasonable repayment rate. Although socially oriented, this Islamic social fund should conduct a screening process of potential recipients through a feasibility survey. Potential recipients are expected to survive in their business, sustainable and growing. Whereas mainstream financing institutions apply specific selection criteria for potential recipients, such is not the case in empowerment through microfinance based on social funds. If potential fund recipients are pre-prosperous societies with social assistance for business capital, they are among the targeted recipients of social funds from microfinance

institutions. However, this looseness may increase the risk of repayment, which will result in the subsequent unsustainability of the financing, which will certainly hamper the process of empowering the pre-prosperous society. Therefore, it is necessary to identify the factors affecting funding and business growth sustainability.

This study identifies factors determining a microfinance program repayment performance, both from borrower and loan attribution. From the borrower side, we perceived it is crucial to identify the demographic aspects and financing attributes that may affect the funding performance. Abdou et al. (2014) suggest several factors to evaluate a micro-financing, such as the clients' profile—gender, age, marital status, occupational education level. On the other side, financing attribute factors are critical factors determining microfinance program performance. Those factors are the types of financing (group or individual), funding size, and time to maturity (tenor).

Mirpourian et al. (2016) show that motivation to reach higher loans affects better repayment performance. Studies conducted by Bilau and St-Pierre (2017) show that older borrowers are wiser, more risk-averse, more insightful, and more responsible than younger borrowers. Older borrowers are more likely to return their loans, while the likelihood of failure is higher in younger age borrowers (Bilau & St-Pierre, 2017). Studies in microfinance have a particular concern regarding the gender of the borrower. D'Espallier et al. (2011) found that, in general, women microfinance clients tend to exhibit lower credit risk for lenders than men clients.

Weber & Ahmad (2015) showed that microfinance empowers women who receive loans. Dorfleitner & Oswald (2016) shows similar results regarding better repayment rates, unless in group lending. All those women's borrowers face additional barriers as their gendered role forces them to be less risky and follow traditionally accepted business modes (Dutta & Banerjee, 2018). From loan attributes, Dorfleitner & Oswald (2016) found that the loan size, the duration of the loan (tenor), and the grace period may affect the possibility of default. Microfinance institutions in a given region typically lend to individual borrowers with existing micro-enterprises rather than exercising a group lending approach, resulting in more substantial loan provisions.

Group financing has advantages in terms of ease of information, group support, and situations where group pressure is required. Several studies show the effect of these factors on the performance of financing. Other studies show that group financing is better in mitigating crime in funding than special financing (Kodongo & Kendi, 2013). Group financing programs are more effective than individual financiers in reducing the risk of returns failure (Kodongo & Kendi, 2013). This scheme is suitable for the underprivileged or households with no entrepreneurial experience and a history of borrowing and successful payments. This article is structured in four parts—introduction and literature reviews described in the first part. The second and third parts describe research methods, results, and discussions. The conclusion provides in the last part.

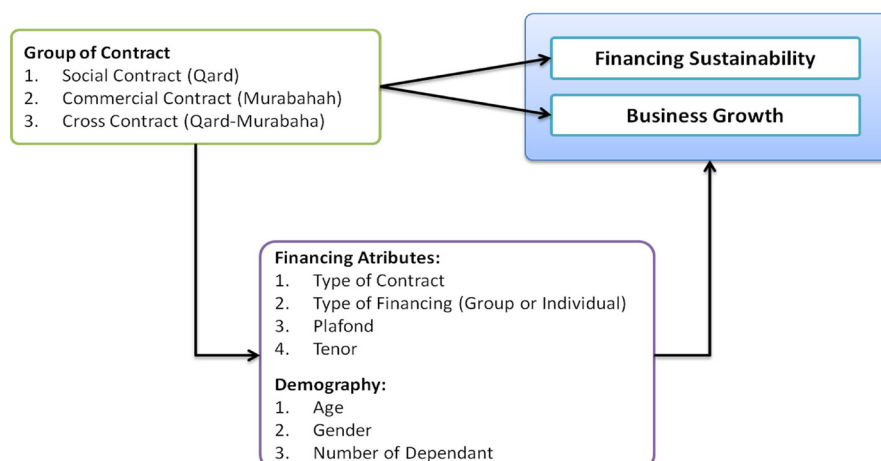
METHODS

This study examines the phenomena occurring in micro-financing using Islamic social funds. We used secondary data in this study. We obtained data from institutions providing micro-financing based on Islamic social funds. The data contains track records of client participation (the debtor) in financing and the type of contract engaged. As well, the data contains demographic and financing attributes. Demographic data include age, gender, and the number of dependents. Data on financing attributes include the type of financing agreement, type of financing (i.e., individual or group), loan size, and tenor. The recipient of funds is a pre-prosperous community group, owns a micro-business with assets below 5 million, and is financed from Islamic social funds, either the qard or murabahah schemes. The data of 1,346 micro-firms was tested in this research.

Financing sustainability occurs when a micro-firm owner generates further financing to the subsequent stage, with larger new loan sizes and tenors, after fully repaying the first loan. Financial sustainability shows that the business run by clients is still running. In empowerment-based financing, the financing provided for the client is a social contract (qard) loan or a zero-interest loan. Only a tiny portion of the micro-firm owner did not get financing with a qard contract at the first stage.

Next, the micro firms whose businesses run and grow will be offered financing with a murabahah contract for the subsequent stage. The existence of business growth indicates the ability of clients to pay more than the principal amount. Clients' ability to transform from a social-financing (qard) contract to a commercial contract (murabahah) accompanied by a margin indicates the business's growth. The change in this type of contract correctly assesses business growth variables. Figure 1 show the overview of the research framework for this study.

Figure 1. Research Framework



We develop two models in this research. The first model analyzes financing sustainability, while the second analyzes business growth. Our analysis was conducted with two logistic models.

Model 1:

$$FS_i = \beta_0 + \beta_1 \text{Contract}_i + \beta_2 \text{FinType}_i + \beta_3 \text{plafond}_i + \beta_4 \text{tenor}_i + \beta_5 \text{age}_i + \beta_6 \text{Gender}_i + \beta_7 \text{ND}_i + \varepsilon_i \quad (1)$$

Model 2:

$$BG_i = \beta_0 + \beta_1 \text{FinType}_i + \beta_2 \text{plafond}_i + \beta_3 \text{tenor}_i + \beta_4 \text{age}_i + \beta_5 \text{Gender}_i + \beta_6 \text{ND}_i + \varepsilon_i \quad (2)$$

Where:

FS (Financing Sustainability); 1 if the financing continues and 0 if the financing does not continue

BG (Business Growth); 1 if the move to murabahah contracts for further financing and 0 if not

RESULT AND DISCUSSIONS

In this section, we provide the F-test result for both models, as presented in Table 1. Based on the processing result, the chi-square value has a significant level of $0.000 < 0.05$. However, the R-squared of the first model is 0.25, while the second model is 0,38. It means the first model's explanatory ability (sustainability in financing) is 25%, while the second model (business growth) is 38%. We conclude that both models can explain the sustainability of financing and the business growth of micro-firms.

Table 1. F test results of two models

DV	-2 Log-likelihood	Chi-square	Sig	Nagelkerke R Square
FS	1545.771	6.052	0.000	0.25
BG	654.242	1.650	0.000	0.38

Table 2. Regression results of Model 1 (DV. Financing Sustainability)

Variable	Hypothesis	Coeff	Prob	Exp(B)
Constant		1.11	0.000***	3.033
Contract	-	-0.505	0.144	0.604
FinType	-	-1.141	0.000***	0.320
Plafond	-	-1.458	0.000***	0.233
Tenor	-	-1.975	0.000***	0.139
Age	+	0.627	0.000***	1.873
Gender	-	0.081	0.595	1.085
Number of Dependents	-	-0.206	0.112	0.814

*10%, **5%, ***1%

The following calculation in Table 2 presents the logit regression of the influence of financing attributes and demographic factors on financing sustainability. Seven independent variables significantly influence the types of financing (group/individual), loan size, tenure, and age. Overall independent variables significantly affect the independent variables.

The following calculation in Table 3 gives the results of logit regression of the influence of attributes of financing and demographic factors on business growth. We divide the discussion into two parts. The first part discusses factors that determine the chance of a micro-firm owner to receive further financing or sustainability financing. This part is the study's model 1 (one), and the result is shown in table 2. Here, financing sustainability is defined as a micro-firm that received further financing after full repayment from the previous loan. As shown in Table 2, several factors that have a significant relationship with financing sustainability are the type of financing, maximum loan size or plafond, loan term or tenor, and age of the micro-firm owner. Type of financing variable divided into individual financing (1) and group financing (0).

Table 3. Regression results of Model 2 (DV: business growth)

Variable	Hypotheses	Coeff	Prob	Exp(B)
Constant		-1.556	0.000***	0.211
FinType	+	1.102	0.000***	3.011
Plafond	+	-19.57	0.990	0.000
Tenor	+	-14.453	0.997	0.000
Age	+	0.324	0.102	1.383
Gender	-	-1.285	0.000***	0.277
Number of Dependents'	-	0.042	0.830	1.043

* 10%, **5%, ***1%

The logistic regression coefficient for the financing type is -1.141, with a significance value of 0.000 < 0.05. This result indicates that micro-firms with individual financing will be less likely to sustain financially than group financing with only 0.32 times of chance to receive further financing. In other words, group financing has a 1.47 times higher chance to receive further financing compared to individual financing. This finding is in line with a study conducted by Kodongo and Kendi (2013), who conclude that group financing programs are more effective in mitigating risks, especially the risk of default. The second variable that has a significant relationship to financing sustainability is the maximum loan size, known as 'plafond.' The group members remind each other regarding loan repayment schedules and play social control.

This research defines maximum loan size IDR 1 million and above as 1 (one) and below IDR 1 million as 0 (zero). As shown in Table 2, the logistic regression result

shows a coefficient -1.458, with a significance value of 0.000. These results indicate that clients with a financing loan size IDR 1 million or above are less likely to sustain with 0.233 times of chance. In other words, a micro-firm owner with a maximum loan of less than IDR 1 million is 1,29 times chance higher to financially sustain compared to a micro firm with a maximum loan size of IDR 1 million or more. The third significant variable is the loan repayment period or 'tenor.' The tenor is also a dummy variable in this study, identifying 1 (one) for above six-month tenor and 0 (zero) for six months or less. The logistic regression coefficient for the tenor variable is -1.975, with a significance value of 0.000.

These results show that a micro-firm with a financing period of six months or less is 0,139 times the chance to sustain. In other words, a loan with a financing period of more than six months is a 1,16 times chance higher to financially sustain compared to a micro firm with a financing period of six months or less. The following variable is the age of the micro-firm owner, divided into clients above 40 years old (1) and up to 40 years old (0). The logistic regression coefficient for the age variable is 0.627, with a significance value of 0.000. This result indicates that micro-firms with an owner over 40 years old have a 1.873 times higher chance of financially sustaining than micro-firm with owners who are 40 years old or younger. This finding aligns with Bilau and St-Pierre's (2017) study, which suggests that older borrowers tend to be wiser, more risk-averse, more insightful, and more responsible for borrowing than younger borrowers.

The second part discusses factors determining the chance of a micro-firm owner receiving a virtue-based qard contract in the first phase to switch to a commercial-based contract in the subsequent term. This switch indicates that the micro-firm experience business growth. This study is expressed in model 2 (two), and the result is shown in table 3. As shown in table 3, we found two variables have a significant relationship with business growth, type of financing and gender. The logistic coefficient shows that the logistic regression coefficient f is 1.102, with a significance value of 0.000. This result indicates that micro-firms with individual financing will have a 3.011 chance to grow higher than micro-firms that generate financing through group financing. This finding is interesting because even though group financing shows higher performance in terms of repayment than individual financing, the micro-firms opportunity to grow is higher in individual financing.

Furthermore, the second significant variable to determine micro-firm growth is gender. The logistic regression coefficient is -1.285, with a significance value of 0.000. These results indicate that female-owned micro-firms will be 0.277 times less likely to enjoy business growth. In other words, a micro-firm with a male owner is 1.38 times more likely to grow than a female-owner micro-firms. This finding support Fiala (2018), who shows that men can better use business capital to increase their business.

Table 4. Coefficient for Simulation

Variable	Category	Coding	Multiplying Coefficient
Type of contract (Qard)	Qard	0	0.505
	Murabaha	1	
Type of financing (Group lending)	Group lending	0	-1.141
	Individual lending	1	
Loan size (IDR 500.000)	Under IDR 1 million	0	-1.458
	IDR 1 million up	1	
Tenor (5 months)	Up to 6 months	0	-1.975
	Above six months	1	
Ages (45 years old)	Up to 40	0	0.627
	Above 40	1	
Gender (female)	Female	0	0.081
	Male	1	
Number of defendants (2 persons)	0 - 2 persons	0	-0.206
	More than two persons	1	

From the previous regression result, we can simulate the probability of how a micro-firm might generate the subsequent financing (sustainable in financing). Suppose there is a potential client who proposes funding to an Islamic microfinance-based microfinance institution with the following criteria:

- The client applies for financing using a qard contract.
- The client chooses group financing.
- The loan size requested is IDR500.000.
- The client is willing to pay installments for five months.
- The client is 45 years old.
- The client is female.
- The client has two dependents.

Microfinance institutions may use this study's results to predict potential clients' likelihood of going to the subsequent financing or not based on the above data. The calculation shows in Table 4.

The data in Table 4 is coded according to the criteria of potential clients. Then the coding is multiplied by the coefficients of the result of the logistic regression calculation as follows:

$$FS = 1.110 - 0.505 * 0 - 1.141 * 0 - 1.458 * 0 - 1.975 * 0 + 0.627 * 1 + 0.081 * 0 - 0.206 * 0 = 1.74$$

The number of FS (Financing Sustainability) obtained is 1.74. Then, to calculate whether prospective clients have a chance of experiencing the sustainability of financing,

perform the calculation based on Hosmer and Lemeshow (2000)'s formula:

$$Probability = \frac{Exp(1,74)}{(1 + Exp(174))}$$

The calculation using Microsoft Excel then obtained the number of 0.85, meaning the prospective clients' probability of the sustainability of the financing is 85%. Therefore, the recommendation is: Approved.

CONCLUSION

This study aims to evaluate the performance of micro-enterprises supported by Islamic social funds. The performance of micro-enterprises here is measured by whether a micro-enterprise is financially sustainable and enjoys business growth. A financially sustained micro-firms generate further financing after the previous loan is fully repaid. Meanwhile, a growing business if a micro-firm got a limited amount of virtue-based zero-interest loans (or a qard contract) at the initial stage and then generated a more commercial loan at the subsequent stage. Commercial financing is available at a higher maximum amount.

This research found some interesting things. First, group lending has a greater chance of obtaining further financing than individual financing. However, individual financing is more likely to grow. Second, financing with maximum financing of above IDR 1 million is more likely to receive further financing, although there is no evidence that this group has the opportunity to generate better growth. Third, micro-business owners over 40 years are more likely to be sustainable in the financing, although no evidence managed businesses grow better than micro-firms managed by owners under 40 years old. Fourth, micro-enterprises managed by women are more likely to receive further financing than those managed by men, although the growth opportunities are higher in micro-enterprises managed by men. This study simulates the probability of a specific micro-firm getting the subsequent financing from the Islamic social fund. However, the model needs to be tested and developed through further research.

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