

The gender effect on small business enterprises' firm performance: Evidence from Indonesia

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Submission date: 01-Aug-2019 07:23AM (UTC+0700)

Submission ID: 1156618016

File name: IJEB.pdf (16.54M)

Word count: 7896

Character count: 40672

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**THE GENDER EFFECT ON SMALL BUSINESS
ENTERPRISES' FIRM PERFORMANCE:
EVIDENCE FROM INDONESIA**

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Abstract

This research investigates the gender effect (female owner) on SME's firm performance. Using survey methods through questionnaire and interview, this study consists of 2,800 observations throughout South Sumatera-Indonesia. The results reveal that the gender (female owner), when they have loan, has no significant impact on firm performance (ROA and ROE). In contrast, the gender (female owner) has a positive and significant impact on their business growth and business survival. Though the result for business growth differs from the result for firm performance (ROA and ROE) in which female ownership has no significant impact on firm performance, we justify that firm performance is only in accounting number and for short periods. Business growth is measured over a longer-term period (as it is measured using the difference between initial capital and current capital), suggesting that over longer periods, women are better at managing the business when they have a loan than men are in a similar position.

Keywords: SMEs financing, gender, firm performance, business growth, business survival, Indonesia

JEL Classification: G32 /G21

1. INTRODUCTION

The growth of SMEs throughout the region is crucial to regional growth. The small business sector has a significant role in enhancing economic growth in Indonesia. Their contribution has increased for three decades, since the deregulation package launched by the Government of Indonesia in 1983, and nowadays the SMEs sector is one of the contributors to the Indonesian economy. In 2011, Indonesian business confidence was positive and high, according to the survey results conducted by Certified Practising Accounting (CPA) Australia. The respondents of the survey held overwhelmingly positive views about their growth prospects in the next 12

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months. This reflects the very positive view the respondents have on the economy and Indonesia's strong economic data. Further, results of a micro and small industry survey in 2011 conducted by the government revealed there were as many as 5,276 companies/SMEs in South Sumatera-Indonesia. About 92.33 per cent of SMEs employed 1 to 4 employees, while 4.25% employed 5 to 19 employees. SMEs could be an alternative if the formal sectors are no longer able to accommodate the workforce. SMEs' empowerment is expected to improve the economy for most people. SMEs are important not only because this sector serves as a provider of jobs, but also it eliminates the poverty gap.

SMEs play a critical role in providing job opportunities, enhancing the quality of human resources, nurturing a culture of entrepreneurship, fostering creativity and opening up new business opportunities. Flexibility, as well as low start-up and operating costs, has enabled SMEs to spring up, to reposition and adjust themselves quickly in response to market and economic changes. Moreover, they easily expand or contract in a short space of time. SMEs have not only survived the impact of big enterprises and the law of economies of scale but have carved out niches for themselves, which enable them to coexist with big enterprises. However, the most common problems for SMEs are the lack of access to market information and technology, the low quality of human resources and the lack of access to capital. Despite efforts by financial institutions and public-sector bodies to close funding gaps, SMEs continue to experience difficulties in obtaining risk capital. SME borrowing requirements are small and frequently do not appeal to financial institutions. More collateral may be required than SMEs can pledge. Financial institutions may lack expertise in understanding small and medium knowledge-based business. The flexibility in the terms and conditions of financing that SMEs require may not be available. However, the Indonesian government implemented policy to encourage banks to have at least 20% of its portfolio in SMEs. Furthermore, the Indonesian Government, particularly Cooperative and Small-Medium Enterprises Affairs, has significantly contributed to the development of SME sectors through various programs, such as SME training and development programs, bank and financial institution linkages, and partnership programs between small business and big firms.

Micro and small firm industry is one component of the processing industry sector contributing substantially in employment creation and welfare in South Sumatera-Indonesia. The rate of growth of micro and small industry sectors for the year 2011 fluctuated considerably. After experiencing positive growth in the first and second quarter, venture IMK slowed to 9.68 per cent growth in the third quarter. This is due to there being businesses that closed down or temporarily ceased production, where as in the fourth quarter, the business grew by 3.3 per cent. Moreover, the agriculture sector has an important role in the economic development of South Sumatera-Indonesia. This sector was in the third position, being the sector that contributed the most to the economy after manufacturing and mining industries. The contribution of the agricultural sector to Gross Regional Domestic Product

33 (GRDP) was 17.28 per cent, or in nominal was 31.42 trillion rupiahs (at current market prices). The scope of agricultural undertakings in this province covers several kinds of activities. Hence, in order to show detailed data in agriculture, it is classified into several sub-sectors, which are food crops, estates, forestry, animal husbandry, and fisheries. The vast area as well as the supportive condition of land in South Sumatera-Indonesia to grow estate crops had led this province to develop a promising proliferation of estates.

7 South Sumatera-Indonesia also has a large amount of activity in mining and quarrying sectors. Prominent mining materials produced by this region consisted of crude oil, natural gas and coal. Furthermore, there is also andesite, clay, and limestone. Crude oil and natural gas were explored in Muara Enim, Lahat, OKU and Prabumulih, whereas coal sites were located in Muara Enim dan Lahat. Moreover, South Sumatera-Indonesia has a large potential for tourism. It is expected to become one of the strengths in providing a reliable source of income in the region. To achieve this goal, local government has been trying out a variety of integrated policies on tourism. Further, the manufacturing sector is the largest contributor to the economy of South Sumatera-Indonesia. In 2011, the role of this sector to the GDP formation amounted to 20.6 per cent, or may be more than one-fifth of the economy of South Sumatera-Indonesia supported by this sector. In 2011, the processing industry sector grew by 5.76 per cent, faster than the growth in 2010. The high growth is due to the SEA Games in Palembang VVXI in late 2011, which drove almost all sectors of the economy, especially the processing industry.

This study aims to provide some empirical results regarding the impact of owner type (gender) on firm performance in particular female owners. Moreover, the level of education and ownership type are also examined. This study is considered as novel due to the fact that there is little or no prior research conducted to investigate the impact of female's owner on SMEs. In addition, the broad sample used, the robust method which combined the employment of primary and secondary data, and the robust statistical testing employed all add value to this research.

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2. LITERATURE REVIEW

The diversity in management has been a topic of interest since last few decades since more than 50% of all firms in East Asia and the Pacific, for example, have some level of female ownership while the percentage is slightly lower in Latin America and the Caribbean and Sub-Saharan Africa at 38% and 32%, respectively (World Bank Enterprise Survey Database, 2011). Furthermore, women own and operate a large percentage of firms in developing countries. However, most of the empirical studies have been based on US data and most of the studies include only the largest firms and public firms. Most of the results reveal that the gender diversity provides a significant and positive impact on firm performance. It is believed that a heterogenous board compared to a homogenous board is able to have a better understanding of the market place of the firm, and furthermore diversity increases creativity and innovation (Carter, Simkins and Simpson, 2003). For example, Carter

et al. (2003) find a significantly positive effect of the percentage of women and minorities on boards, directors and firm value after controlling for a number of other factors which may affect firm value. Catalyst (2004) and Adler (2001) also find positive correlations between 'female-friendly' US Fortune 500 firms and the performance of these firms. Carter et al. (2003) explained that a more diverse board of directors is able to make decisions based on the evaluation of more alternatives compared to a more homogenous board. Further, diversity management may also improve the image of the firm and in the end, this will affect positively on firm performance and shareholder value.

Further, Bell (2005) finds that women in top management (female top CEO or board members) based on a large sample of US firms have a positive effect on the payment of the executives of the firms, and further, these firms also tend to have a higher proportion of women at lower management levels. Contrary to these findings, Shrader, Blackburn and Iler (1997) are unable to find any significantly positive relationship between the percentage of female board members and firm performance (measured by ROA and ROE) based on 200 largest US firms. Kochan et al. (2003) also find no positive relations between gender diversity in management and firm performance for US companies. Farrell and Herch (2005) find that gender has no impact on firm performance and, the addition of women to the board of directors appears to be driven by tokenism. Adams and Ferreira (2009) find that female directors have a negative impact on firm performance, in particular for well governed firms.

Not only do women directors have fewer attendance problems but also that overall attendance behavior of directors (including men) improves the more women are on the board (Adams and Ferreira, 2009). Further, the previous studies on differences in firm performance by gender find that women-owned firms were more likely to close and had lower levels of sales, profits, and employment (Robb 2002; Robb and Wolken 2002).

Licuanan (1993) investigates 455 successful women covering five Asean countries (Indonesia, Malaysia, Philippines, Singapore and Thailand) and finds that women considered the importance of family and values and the need for sharing benefits. Sigh, Reynolds and Muhammad (2001) examine 200 Indonesian micro and small firms and found that women-owned businesses tended to be smaller in size, have less assets, are in low-income informal sector particularly the service sector, possess lower expectations for future growth, and consequently report lower economic performance measures like sales, employment growth and profitability.

For small firms, business activities revolve around the owner-manager who is also the principal decision-maker. Therefore, there might be a different impact on gender's type of the business' operator/owner. In last few decades in Indonesia, traditionally and culturally, women are perceived as a manager in their domestic household and tend to only manage their family. However, the role of women has changed substantially these days as women now become available on the man's

job. It is also assumed that the presence of women in the business may improve the business performance as women possess unique characteristics. Therefore, this study attempts to investigate the impact of gender (female owner) in small business enterprises' performance in Indonesia.

3. SAMPLE, VARIABLES AND MODEL ANALYSIS

3.1. Sample

The population in this study is all small business enterprises in the Province of South Sumatera-Indonesia. The Province of South Sumatera-Indonesia consists of 4 autonomous cities and 11 regencies. To capture all SMEs that can represent each region in the Province of South Sumatera-Indonesia and some location of the sub-district in each city/regents, a combination of random (cluster sampling) and non-random (judgmental and incidental sampling) sampling is used in this study.

To specify the respondents used in this study, this study uses the SME definition promulgated by the Indonesian Government (the Ministry of SMEs and Cooperatives and Bank Indonesia according to 2008 law).

- Micro firms are defined as enterprises with net assets less than IDR 50 million (land and building excluded) or enterprises which have less than IDR 300 million total annual sales.
- Small firms are defined as enterprises with net assets from IDR 50 million to IDR 500 million (land and building excluded) or enterprises which have total annual sales from IDR 300 million to 2.5 billion.
- Medium-sized firms are defined as enterprises with net assets from IDR 500 million to IDR 10 billion (land and building excluded) or enterprises which have total annual sales from IDR 2.5 billion to 50 billion.

This study collects 2,800 SMEs over South Sumatera-Indonesia Province. However, from 2,800 SMEs, only 2,198 SMEs used debt to finance their business and there were 25 missing responses; therefore, only 2,198 are used in the regression analysis. The 25 missing responses were due to the incomplete answers provided. The people interviewed were mostly the SME owners. The total number of respondents obtained from each city/regency is calculated proportionately based on the sub-districts for each city/regency. The detail of the sample acquired from each city/regent is shown in the Table 1 (see appendix). This research employs a survey method used (1) a structured and semi-structured questionnaire, (2) in-depth interviews. Questionnaire surveys have been the preferred choice for the collection of data in studies involving the investigation of the capital structure of both large and small firms (Graham and Harvey, 2001; Tucker and Lean, 2003; Hossain, Millman and Matlay, 2006). Additional data are obtained through government publications from Indonesian Statistics Office, Indonesian Bank, Cooperative and Small Business Enterprises Department, Planning and Development Affairs Office.

Table 1
Population and Sample Used

No. Cities and Regencies	Capital of the city and/ or regency	Sub-district sed as samples	Respondents Obtained
1 Palembang City	Palembang	16	649
2 Ogan Ilir Regency	Indralaya	6	243
3 Ogan Komering Ilir Regency	Kayuagung	7	284
4 Ogan Komering Ulu Regency	Baturaja	3	122
5 Ogan Komering Ulu Timur Regency	Martapura	2	81
6 Ogan Komering Ulu Selatan Regency	Muara Dua	2	81
7 Prabumulih City	Prabumulih	5	203
8 Muara Enim Regency	Muara Enim	3	122
9 Lahat Regency	Lahat	2	81
10 Pagar Alam City	Pagar Alam	2	81
11 Empat Lawang Regency	Tebing Tinggi	1	41
12 Lubuk Linggau City	Lubuk Linggau	6	243
13 Musi Rawas Regency	Muara Beliti	7	284
14 Musi Banyuasin Regency	Sekayu	5	203
15 Banyuasin Regency	Pangkalan Balai	2	81
Total		69	2.800

Source: Various reliable sources (various related government office)

3.2. Variables

The dependent variables are SME firms' performance, which is measured by:

- (1) Financial ratio such as Return on Assets (ROA) estimated and Return on Equity (ROE) estimated.
- (2) Business growth. Business growth is obtained from the difference between initial capital and current capital employed. If initial capital is lower than the current capital, then it can be said that there is a positive growth and otherwise. Two categories are set: SME has a positive growth and SMEs has a negative growth. The first category is coded as "0" if SME has a positive growth; the second category is coded as "1" if SME has a negative growth, otherwise it is coded equal to "0". The baseline category is used for this dummy if SME has a positive growth.
- (3) Business survival. Business survival is obtained from the firm age. If firm has been established for 5 years or more, then it can be said that the firm has survived and otherwise. Two categories are set: SME has survived for 5 years and SME has survived less than 5 years. The first category is coded as "0" if SME has survived for 5 years or more; the second category is

coded as "1" if SME has survived less than 5 years, otherwise it is coded equal to "0". The baseline category is used for this dummy if SME has survived for 5 years of more.

The explanatory variables used for the first and the second questions are:

- (1) Loan status. Two categories are set: SME has a loan and SME has no loan. The first category is coded as "0" if SME is currently/previously having a loan; the second category is coded as "1" if SME have no loan, otherwise it is coded equal to "0". The baseline category is used for this dummy if SME has is currently/previously having a loan.
- (2) SME owners' gender. Two categories are set: male and female. The first category is coded as "0" if male; the second category is coded as "1" if female, otherwise it is coded equal to "0". The baseline category is used for this dummy if the owner is male.
- (3) Ownership status. Three categories are set: sole proprietorship, two person ownership and group ownership. The first category is coded as "0" if it is sole proprietorship; the second category is coded as "1" if it is two person ownership, otherwise it is coded equal to "0"; the third category is coded as "1" if it is group ownership, otherwise it is coded equal to "0".
- (4) SMEs owner's education background. Four categories are set: primary school, elementary school, senior high school and undergraduate degree. The first category is coded as "0" if SME's owner's education is primary school; the second category is coded as "1" if SME's owner's education is elementary school, otherwise it is coded equal to "0"; the third category is coded as "1" if SME's owner's education is senior high school, otherwise it is coded equal to "0"; the fourth category is coded as "1" if SME's owner's education is undergraduate degree, otherwise it is coded equal to "0".

The control variables used are:

- (1) Dummy industry types. Six categories of SMEs' industry types, namely (1) Agriculture, Stockbreeding, Forestry and Fishery, (2) Processing, Home and Handicraft Industry, (3) Construction and Construction Tools Industry, (4) Trade and Restaurant Industry, (5) Finance and Other Services Industry, (6) Etc. The first category is coded as "1" if SME belongs to this industry, otherwise it is coded equal to "0"; The second category is coded as "1" if SME belongs to this industry, otherwise it is coded equal to "0"; The third category is coded as "1" if SME belongs to this industry, otherwise it is coded equal to "0"; The fourth category is coded as "1" if SME belongs to this industry, otherwise it is coded equal to "0"; The fifth category is coded as "1" if SME belongs to this industry, otherwise it is coded equal to "0"; The sixth category is coded as "1" if SME belongs to this industry, otherwise it is coded equal to "0".
- (2) Firm size. Log of total assets is used to represent the firm size.

3.3. Model Analysis

Model analysis used is quantitative analysis, and the analysis is primarily directed toward investigating explanatory variables related to the performance of various dependent variables. Maddala and Lahiri (2009) specify problems that might be present in the regression model, such as heteroskedasticity and multicollinearity. Therefore, for quantitative analysis, series of diagnostic testing are conducted prior to model specification, including normality test (IM-test), heteroskedasticity test (Breusch-Pagan test) and multicollinearity test (VIF test). The diagnostic testing is employed to specify which appropriate regression models fits the data.

The equation below is a starting point for this study to establish if types of financing from microfinance and types of owners in terms of gender have a different impact on firm performance (ROA, ROE, business growth and business survival).

$$Y_i = \alpha + \beta_1 L_{i1} + \beta_2 G_{i1} + \beta_3 O_{i1} + \beta_4 E_{i1} + \beta_{11} C_{i1} + \beta_{12} C_{i2} + u_i$$

$$u_{it} = \mu_i + \lambda_t + v_{it}$$

$$i = 1, \dots, N; t = 1, \dots, T$$

where y_i is firm's performance (ROA, ROE, business growth and business survival). L_{i1} is the dummy for loan status, G_{i1} is the dummy for gender and, O_{i1} is the dummy for ownerships' types, E_{i1} is the dummy for SME owners' educational background, C_{i1} is the SMEs' type (industry), C_{i2} is the firm size. μ_i denotes the unobservable individual effect, λ_t denotes the unobservable time effect, and v_{it} is the remainder stochastic disturbance term.

The overall joint IM test rejects the model assumption that $y \sim N(x\beta, \sigma^2 I)$, because $p = 0.000$ at $p = 0.0013$ in the total row for both ROA and ROE model respectively. The decomposition indicates that all three assumptions of homoscedasticity, symmetry and normal kurtosis are rejected (see Table 2 in appendix). This study employs a quantile regression and probit regression.

Table 2
Information Matrix (IM) Test Result

Source	ROA		ROE	
	chi2	p	chi2	p
Heteroskedasticity	21.91	0.3456	93.5	1.5816
Skewness	85.17	0.0000	67.57	0.0000
Kurtosis	0.07	0.7903	3.81	0.0509
Total	107.15	0.0000	164.89	0.0013

Quantile Regression

Quantile regression essentially transforms a conditional distribution function into a conditional quantile function by splitting it into segments. In OLS, modelling a conditional distribution function of a random sample (y_1, \dots, y_n) with a parametric

function $\mu(x_i, \beta)$ where x_i represents the independent variables, β the corresponding estimates and μ the conditional mean, can present the following minimization problem (Cameron & Trivedi, 2010):

$$\min_{\beta \in R} \sum_{i=1}^n (y_i - \mu(x_i, \beta))^2$$

Obtains the conditional expectation function $E[Y | x_i]$ can proceed in quantile regression. The central feature thereby becomes ρ_τ which serves as a check functions ρ_τ

$$\rho_\tau = \begin{cases} \tau * x, & \text{if } x \geq 0 \\ (\tau - 1) * x, & \text{if } x < 0 \end{cases}$$

In quantile regression one now minimises the following function:

$$\min_{\beta \in R} \sum_{i=1}^n \rho_\tau(y_i - \mu(x_i, \beta))$$

In contrast to OLS, the minimisation is done for each subsequent defined by τ , where the estimates of the τ th-quantile function is achieved with the parametric function $\mu(x, \beta)$ (Koenker & Hillock, 2001).

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Probit Regression

Since the aim of this study is to identify the main factors which determine the probability of business growth and business survival, a probit regression model is employed. The probit model is one of the binary outcome models. The dependent variable, y_i , takes only two values, so its distribution is unambiguously the Bernoulli, or binomial with one tail, with a probability of p_i (Cameron & Trivedi, 2010).

Suppose the outcome variable, y , takes one of two values:

$$y = \begin{cases} 1 & \text{with probability } p \\ 0 & \text{with probability } 1 - p \end{cases}$$

Given p as a function of regressors x in the model, there is no loss of generality in setting the outcome values to 1 and 0. The probability mass function for the observed outcome, y , is $p^y(1-p)^{1-y}$, with $E(y) = p$ and $\text{Var}(y) = p(1-p)$.

A regression model is formed by parameterising p to depend on an index function $x\beta$, where x is a $K \times 1$ regressor vector and β is a vector of unknown parameters. In standard binary outcome models, the conditional probability has the form

$$p_i = \Pr(y_i = 1 | x) = F(x_i' \beta)$$

Where $F(\cdot)$ is a specified parametric function of x , usually a cumulative distribution function (s.d.f) on $(-\infty, \infty)$ because this ensures that the bounds $0 \leq p \leq 1$ are satisfied.

In this study the business growth is considered to be poor if the value of initial capital is larger than the current capital employed and otherwise. The business survival is considered to be low if the firms have survived for less than 5 years and otherwise.

The descriptive statistics of all variables is exhibited in the Table 3 (see appendix). The mean value for ROA is 0.3014 with a range of 0.0100 to 0.6158. This mean value indicates that the majority of SMEs are relatively showing the same profit return over their assets. This positive value indicates an effective utilisation of firm assets in generating an operating surplus in the business. The mean value for ROE is 0.3023, with a range of 0.0021 to 1.7258, suggesting that most of the firms experienced relatively average firm performance based on this accounting

Table 3
Descriptive Statistics

Variables	Obs.	Mean	Std.Dev.	Min	Max
Dependent					
ROA	2198	0.3014	0.2380	0.0100	0.6158
ROE	2198	0.3023	0.2417	0.0021	1.7258
Business Growth	2198	0.2498	0.2330	0.0000	1.0000
Business Survival	2198	0.2127	0.2094	0.0000	1.0000
Independent					
Have a loan	2775	0.0000	0.0000	0.0000	0.0000
Have no loan	2775	0.2079	0.2437	0.0000	1.0000
Male	2198	0.0000	0.0000	0.0000	0.0000
Female	2198	0.2912	0.2674	0.0000	1.0000
Primary school	2198	0.0000	0.0000	0.0000	0.0000
Elementary school	2198	0.1873	0.3903	0.0000	1.0000
Senior high school	2198	0.5970	0.4907	0.0000	1.0000
Undergraduate degree	2198	0.0751	0.2637	0.0000	1.0000
Sole proprietorship	2198	0.0000	0.0000	0.0000	0.0000
Two persons' ownership	2198	0.0243	0.1543	0.0000	1.0000
Group ownership	2198	0.0175	0.1314	0.0000	1.0000
Industry one	2198	0.0464	0.1630	0.0000	1.0000
Industry two	2198	0.3207	0.3785	0.0000	1.0000
Industry three	2198	0.0732	0.1660	0.0000	1.0000
Industry four	2198	0.3926	0.2985	0.0000	1.0000
Industry five	2198	0.1051	0.3071	0.0000	1.0000
Industry six	2198	0.0619	0.1417	0.0000	1.0000
Firm size	2198	1.7419	0.7490	0.3480	4.4000

measurement. The positive value indicates that the firms in the sample create value for the SMEs' owners and operating efficiency is positively translated into benefits for the owners.

The mean value for business growth is 0.2498 with a range of 0.0000 to 1.0000, suggesting that only 24.98 per cent of the firms have a negative growth. The mean value for business survival is 0.4094, with a range of 0.0000 to 1.0000, suggesting that most of the firms have survived for five years or more. Have a loan is used as a baseline category for the loan status and it takes value of zero. The mean value for have no loan 0.4195 with a range of 0.0000 to 1.0000. The male is used as a baseline category for gender and it takes value of zero. The mean value of female is 0.2912 with a range of 0.0000 to 1.0000 suggesting that 29.12 per cent from the respondents are female.

Primary school is used as a baseline category for education background of SMEs' owner. The mean value of elementary school is 0.1873 with a range of 0.0000 to 1.0000, suggesting that 18.73 per cent from the respondents have elementary school background. The mean value of senior high school is 0.5970 with a range of 0.0000 to 1.0000, suggesting that 59.70 per cent from the respondents have senior high school background. The mean value of undergraduate degree is 0.0751 with a range of 0.0000 to 1.0000, suggesting that 7.51 per cent from the respondents have undergraduate degree background.

Sole proprietorship is used as a baseline category for ownership's status and it takes value of zero. The mean value of two persons' ownership is 0.0243 with a range of 0.0000 to 1.0000, suggesting that 2.43 per cent from the respondents have joined-ownership. The mean value of group ownership is 0.0175 with a range of 0.0000 to 1.0000, suggesting that 1.75 per cent from the respondents have group ownership. The mean value of industry one, two, three, four, five and six are 0.0464, 0.3207, 0.0732, 0.3926, 0.1051 and 0.0619 respectively. The types of industry that dominate in the survey are industry two and industry four. The mean value of firm size is 1.7419 with a range of 0.3480 to 4.4000, suggesting that the majority of the firms are relatively have small assets.

4. FINDINGS

This section provides the regression results. Column 3 to 6 show quantile regression results for $\alpha = 0.25$, $\alpha = 0.50$, $\alpha = 0.75$, $\alpha = BSQR0.50$ respectively. As can be seen in Table 4 in appendix, SMEs who have a loan have a positive and significant impact on firm performance (ROA) throughout all quantiles. This suggests that the debt may encourage the SMEs to manage their business efficiently, as they have to achieve the desired profit, and therefore the monthly payment of debt can be paid on time. Formal microfinance, in this study banks and rural banks, provides a controlling function to assure that their debtor can pay off their monthly payment on time. Moreover, the fostering function from the financier may encourage the SMEs to be able to develop

Table 4
Quantile Regression Result

ROA	OLS	QR_25	QR_50	QR_75	BSQR_50
Cons.	0.5540 (0.0430)***	0.3110 (0.0380)***	0.5100 (0.0560)***	0.8370 (0.0810)***	0.5100 (0.0570)***
Have no loan	0.1090 (0.0950)	0.2690 (0.0840)***	0.0930 (0.1240)	-0.0170 (0.1790)	0.0930 (0.1080)
Female	0.0140 (0.0200)	0.0030 (0.0180)	0.0210 (0.0260)	0.0260 (0.0380)	0.0210 (0.0210)
Two persons' ownership	0.0620 (0.0590)	0.0390 (0.0520)	0.0950 (0.0770)***	0.1060 (0.1110)	0.0950 (0.0930)
Group ownership	0.0550 (0.0860)	0.0590 (0.0760)	0.1030 (0.1130)	0.0300 (0.1620)	0.1030 (0.0930)
Elementary school	0.0200 (0.0340)	0.0160 (0.0300)	0.0170 (0.0440)	-0.0180 (0.0640)	0.0170 (0.0370)
Senior high school	0.0390 (0.0300)***	0.0300 (0.0270)	0.0190 (0.0390)	0.0080 (0.00570)***	0.0190 (0.0220)
Undergraduate degree	-0.0270 (0.0420)	0.0020 (0.0370)	-0.0240 (0.0550)	-0.0730 (0.0790)	-0.0240 (0.0310)
Industry one	-0.0670 (0.0650)	-0.0560 (0.0580)	-0.0550 (0.0850)	-0.0340 (0.1230)	-0.0550 (0.0830)
Industry two	-0.0450 (0.0550)	0.0070 (0.0510)	-0.0040 (0.0687)	-0.0270 (0.1158)	-0.0370 (0.0760)
Industry three	-0.0780 (0.0580)***	0.0068 (0.0570)	-0.0130 (0.0760)	0.0250 (0.1100)	-0.0130 (0.0680)
Industry four	-0.0780 (0.0200)***	-0.0030 (0.0170)	-0.0050 (0.0260)	0.0160 (0.0370)	-0.0050 (0.0240)
Industry five	-0.1060 (0.0330)***	-0.0570 (0.0290)***	-0.0810 (0.0430)***	-0.1150 (0.0620)***	-0.0810 (0.0490)***
Industry six	-0.0210 (0.0560)	-0.0140 (0.0500)	0.0100 (0.0740)	-0.0300 (0.1070)	0.0100 (0.0470)
Firm size	-0.1550 (0.0130)***	-0.0990 (0.0120)***	-0.1570 (0.0170)***	-0.2300 (0.0250)***	-0.1570 (0.0200)***

*t-value. *** Sig at 1% significance level, ** Sig at 5% level, * Sig at 10% level. Standard Error is in parentheses.

their business. This indicates that there is a mutual benefit from the creditor and debtor.

Meanwhile, gender, in particular whether or not a female owner, has no significant impact on firm performance (ROA) throughout all quantiles. This suggests that the role of men as the head of household is still firmly entrenched in the society. Though some women work to earn money, they only support the finances of the family. Therefore, the effort made by the women in the SMEs is probably not much as for men.

For the ownership status, sole proprietorship has a positive and significant impact on firm performance across quantile. Meanwhile, two person and group ownership provide no significant impact on firm performance across the quantile except for two person ownership in quantile 50. This supports the fact the majority of the SMEs are owned by single owners (sole proprietorship); therefore, the impact is much greater than other forms of ownership. Moreover, the culture of Indonesian society where people tend to work on their own, supports this result.

Further, the educational background overall has no significant impact on firm performance throughout all quantiles except for senior high school in quantile 75. This result indicates that education does not always determine the success. From our interview result, we observed that most people who have high motivation to succeed are successful by any means. The high motivation of the SME owners can also be seen by the way they interacted with our surveyors and the way they answered our questions in which, at the end, we can see them answering the questions honestly.

For the control variables, the type of industry has no significant impact on firm performance, suggesting that industry type does not matter to the improvement of the firm performance as a consequence having a debt. Unlike the type of the industry, the coefficient for firm size is negative and significant for all quantiles, suggesting that big firms (SMEs) who have a loan have a negative significant impact on firm performance. This may due to the fact that bigger firms (SMEs) probably have stable capital and earnings. The additional loan only becomes a burden to those firms. Moreover, the majority of big firms do not account for their income from only one source. Usually, big firms (SMEs) have some of business centres.

In Figure 1 (see appendix), it can be seen that firms (SMEs) who have a loan have an increase in firm performance (ROA) at higher quantile. It can be concluded that there is an increase trend from lower quantile to higher quantile. Furthermore, the firms (SMEs) who have no loan and are owned by females have moderate impact on firm performance over quantile. Furthermore, the firms (SMEs) who obtained a loan from non-formal microfinance, who have not register their firms and who received no fostering have a high impact on firm performance at higher quantile.

As can be seen in Table 5 (see appendix), SMEs who have a loan have a positive and significant impact on firm performance (ROE) throughout all quantiles. Meanwhile, gender, in particular female owners, has no significant impact on firm performance (ROE) throughout all quantiles. For the ownership status, sole proprietorship has a positive and significant impact on firm performance across quantile. Meanwhile, education background has no significant impact on firm performance. This result is similar to the result obtained for ROA.

For control variables, the type of industry has no significant impact on firm performance. Further, the coefficient for firm size is negative and significant for all quantiles, suggesting that big firms (SMEs) who have a loan have a negative significant impact on firm performance. This may due to the fact that bigger firms

Table 5
Quantile Regression Result

ROE	OLS	QR_25	QR_50	QR_75	BSQR_50
Cons.	0.5750 (0.0980)***	0.2370 (0.0610)***	0.5380 (0.0950)***	0.9390 (0.1440)***	0.5380 (0.1440)***
Have no loan	0.1110 (0.0980)	0.2750 (0.0600)***	0.1110 (0.0920)**	-0.0190 (0.1450)	0.1110 (0.1190)
Female	0.0090 (0.0200)	0.0050 (0.0150)	0.0210 (0.0210)	0.0250 (0.0330)	0.0210 (0.0300)
Two persons' ownership	0.0590 (0.0610)	0.0580 (0.0360)***	0.0950 (0.0610)***	0.1050 (0.0870)***	0.0950 (0.0920)
Group ownership	0.0530 (0.0880)	0.0640 (0.0540)*	0.1000 (0.0850)*	0.0350 (0.1260)	0.1000 (0.0930)
Elementary school	0.0330 (0.0350)	0.0360 (0.0230)***	0.0170 (0.0360)	0.0100 (0.0560)	0.0170 (0.0360)
Senior high school	0.0440 (0.0310)***	0.0550 (0.0200)	0.0210 (0.0320)	0.0030 (0.0480)	0.0210 (0.0280)
Undergraduate degree	-0.0200 (0.0440)	0.024 (0.0300)	-0.020 (0.0450)	-0.078 (0.0680)	-0.020 (0.0480)
Industry one	-0.1040 (0.0109)	-0.0280 (0.0690)	-0.0870 (0.1060)	-0.1240 (0.1570)	-0.0870 (0.1620)
Industry two	-0.0320 (0.0890)	0.0480 (0.0550)	-0.0450 (0.0850)	-0.0900 (0.1280)	-0.0450 (0.1430)
Industry three	-0.1120 (0.0105)***	0.0310 (0.0660)	-0.0620 (0.1020)	-0.0890 (0.1550)	-0.0620 (0.1500)
Industry four	-0.0340 (0.0890)	0.0350 (0.0550)	-0.0520 (0.0850)	-0.0750 (0.1280)	-0.0520 (0.144)
Industry five	-0.1420 (0.0930)***	-0.0280 (0.0580)	-0.1150 (0.0890)**	-0.2090 (0.1350)***	-0.1150 (0.1420)
Industry six	-0.0540 (0.1040)	0.0530 (0.0650)	-0.0350 (0.1010)	-0.1280 (0.1520)	-0.0350 (0.1470)
Firm size	-0.1600 (0.0140)***	-0.1060 (0.0100)***	-0.1560 (0.0140)***	0.2320 (0.0210)***	-0.1560 (0.0190)***

*t-value. *** Sig at 1% significance level, **Sig at 5% level, *Sig at 10% level. Standard Error is in parentheses.

(SMEs) probably have stable capital and earnings. The additional loan only becomes a burden to those firms. The result for control variables is also similar to the result obtained for ROA.

Figure 2 (see appendix) exhibits the impact of explanatory variables over the quantiles. It can be seen that the firms (SMEs) who have a loan have an increase firm performance at higher quantile. It can be concluded that there is an increase trend from lower quantile to higher quantile. In conclusion, the graph's result obtained for ROE also exhibits the same pattern as obtained for ROA.

As can be seen in Table 6 (see appendix), the probit regression result for business growth indicates that firms (SMEs) who have a loan have a negative and significant impact on their business growth. This may indicate that the additional funding (loan) injected into the firm lowers the business growth. Though one of the reasons provided by the SMEs is for business growth, in fact not all SMEs use the debt in line what they stated in their purpose to the financier. This is also one of the common problems found in reality that some people or firms tend to mis-use the debt they obtained for personal purposes, such as buying a car, buying a house, paying their children's education fees, etc.

Table 6
Probit Regression Result

Variables	Business Growth	Business Survival
Cons.	-0.0678 (0.3972)***	-0.8699 (0.1692)***
Have no loan	0.1184 (0.0863)	0.3214 (0.0888)***
Female	0.2112 (0.0932)*	0.2112 (0.0932)**
Firm size	-0.1639 (0.1010)	-0.2350 (0.1052)**

*t-value. *** Sig at 1% significance level, ** Sig at 5% level, * Sig at 10% level. Standard Error is in parentheses.

Unlike the loan status, firms (SMEs) who are owned by females have a positive and significant impact on their business growth when they borrowed additional funding. Unlike females, firms (SMEs) who are owned by male owners have a negative and significant impact on their business growth when they borrowed additional funding. The possible reason is that when females have a loan, they tend to have greater worries of not being able to pay it back; therefore, it makes them efficient and they pay it on time. In the end, their business growth is better than before having a loan. Though the result for business growth differs from the result for firm performance (ROA and ROE), in which female have no significant impact on firm performance, we can justify this in that firm performance is only in accounting number and measured for a short period. Business growth is measured for a longer-term period (as it is measured using the difference between initial capital and current capital), suggesting that over a longer time, women are better able in managing the business when they have a loan. Finally, the coefficient for firm size is negative but not significant.

For business survival, firms (SMEs) who have a loan have a negative and significant impact on their business survival while the firms (SMEs) who have no loan have a positive and significant impact on their business survival. This may indicate that the debt provides a negative impact on the business survival. Two

Figure 1: Quantile Regression (ROA)

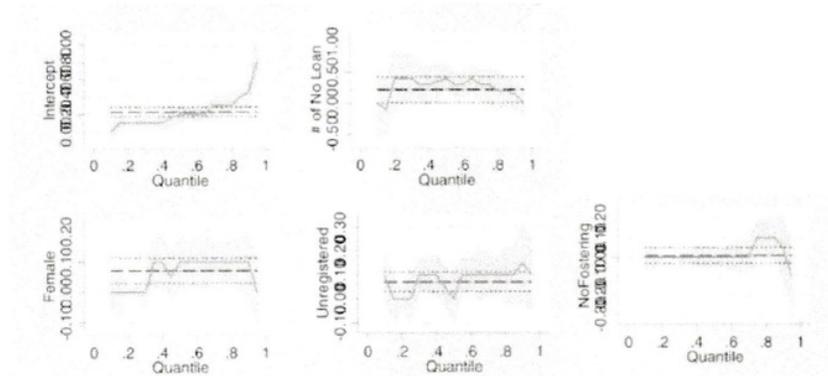
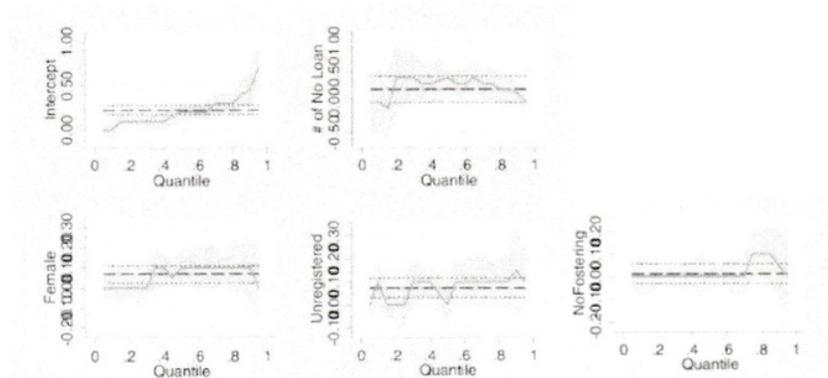


Figure 2: Quantile Regression (ROE)



possible reasons are that the SMEs have lack of management and are illiterate in terms of accounting (bookkeeping activity, income statement, balance sheet statement), and therefore when the SMEs obtained the loan, they have difficulties in managing their total assets.

The coefficient for gender, in particular for females, is that the firms (SMEs) owned by females have positive and significant impact when they have a loan, but not for males, which has negative and significant impact. This result is similar to the result of business growth, so the possible explanations are similar. The coefficient for firm size is also a negative and significant, which is similar to the result for

business growth. In conclusion, the results for business growth are relatively similar to the business survival results.

5. CONCLUSIONS

In conclusion, the results of this study reveal that there is a significant positive impact on firm performance as a result of having a loan. However, having loan in longer term provides a negative significant impact on business growth and business survival. In addition, female are better able in managing the business when they have debts in long term. Notwithstanding the findings, the current study does have limitations, which point to potentially fruitful further research opportunities. First, the current study used only a few aspects of SMEs. Further studies could consider other aspects of SMEs, such as demographic factors. Second the findings are based on research in a single province and may not be generalisable. Further, the findings of this study are restricted to the limitation of the data, which was collected through survey method and publicly available data sources. If there were any problems relating to the responses acquired and the data disclosures, then that would limit the validity of the findings. In addition, the entire sample comprises only 2,800 respondents, with the survey being conducted in the beginning of 2013.

Acknowledgements

This research was funded by the East Asian Development Network (EADN) and the Global Development Network (GDN). We are grateful to Dr. Piedad Geron for helpful comments and suggestions. The paper has also benefitted from presentations at the East Asian Development Network Annual Forum in Manila.

Note

1. This research was funded by the East Asian Development Network (EADN) and the Global Development Network (GDN). We thank to Dr. Ma. Piedad Geron as our mentor on this research.

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