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FINANCING CONSTRAINTS ON SMES IN EMERGING MARKETS: DOES FINANCIAL LITERACY MATTER?

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Abstract

In the current context, SMEs in emerging markets are facing a number of obstacles to accessing financing sources. Therefore, various studies have discussed determinants of SMEs' accessibility to finance. Yet to expand the conceptual framework in this research area, this article proposes that financial literacy of owner/managers is a key influencing factor of SMEs' access to financing sources. The collaboration between firms' characteristics and owner/managers' characteristics, specifically financial literacy of owner/managers, develops the unification of power resources. This would lead to an improvement to the quality and efficiency of financial decision making of SMEs to overcome constraints on the access to financing sources in emerging markets.

Keywords: Financial Literacy, Credit Constraints, SMEs Financing, Emerging Markets.

JEL Classification: D14, G32, O1, O16.

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1. Introduction

Small and medium enterprises (SMEs) play an important role in both developed and developing countries. SMEs contribute to job creation for the workforce and GDP growth in nations. They also contribute to economic diversification and social stability, in particular in the private economic sector. However, the majority of SMEs literature impresses that these firms face bigger barriers to external financing than large firms and this impacts the growth and development of SMEs (Ardic et al., 2011). For example, small firms find it difficult to obtain commercial bank financing, especially long-term loans. Normally, the reasons are lack of collateral, weak cash flow, difficulties in assessing credit rating, inadequate credit history, high risk premiums, and high transaction costs (IFC, 2009). In addition, financial system in emerging markets also shows some constraints such as low domestic savings, poverty and lack of information between applicants and suppliers of credit (De la Torre, et al., 2011).

To examine financing constraints on SMEs, in previous studies, most literature on determinants of financing pattern and access to credit for SMEs focused on indicators such as collateral, interest rate, firm performance (Rupeika-Apoga, 2014; Harvie, et al., 2013), firm's size, age of the firm, characteristics of the firm, technological capabilities and location (Cenni, et. al., 2015). Over the same period, in emerging markets, a number of research focused on the determinants of capital structure of firms (Berger & Udell, 2006; Nha, et al., 2016; Noulas & Genimakis, 2011; Vo, 2017). However, Hatega (2007) found that most SME owner/managers have limited information on financing products and financial market, financial knowledge, skills and abilities to conduct budgeting, proper book-keeping and financial planning. To expand and understand deeply other constraints, this paper provides additional insight into financial literacy of SME owner/managers because financial literacy is defined as the ability to make informed judgments and to take effective decisions regarding money management, wealth, portfolio allocation and debt literacy (Lusardi & Tufano, 2015; van Rooij, et al. 2011; Cole et al., 2009; Hilgert et al., 2003;). In addition, a very limited number of studies analyze and identify the role of financial literacy of owner/managers' SMEs as an important factor which also influences choices and access to external sources of SMEs. In order to fill this gap, it is necessary for researchers to do more research into this area to contribute to the improvement on financing constraint problems of SMEs especially in emerging markets.

Accordingly, this paper expands the current problem of financing constraints on SMEs in emerging markets in two contributions. First, this paper proposes a conceptual model to suggests that besides the characteristics of SMEs in the previous studies, whether financial literacy of SME owner/managers is also considered as an important factor that drives SME owner/managers' access to proper financing sources and financial decision making in their capital structure in emerging markets. Second, the author also proposes to construct a combined financial literacy score index for SME owner/managers based on Lusardi, A. (2006) and OECD (2005).

The paper has three more parts: literature review; development of framework and implementation including objectives, empirical models, measuring financial literacy; and conclusions.

2. Literature Review

Based on economic literature on financing constraints on SMEs, this section focuses on reviewing factors determining access to credit of firms from previous studies and especially, the author emphasizes the role of financial literacy of SME owner/managers in decision and access to external financing sources.

2.1 Factors Determining Access to Finance of SMEs

Most literature review on determinants of access to credit of firms has focused on four main groups namely, owner's characteristics, firm's characteristics, firm's location and ownership types (Akoten, et al., 2006; Beck, 2007; Beck & Demirguc-Kunt, 2006). Furthermore, in recent years, some studies in developing countries emphasized the role of networks and relationship between banks and firms and it is also a vital indicator which impacts on access to credit for SMEs (Cenni, et. al., 2015; Le & Nguyen, 2009; Malesky & Taussig, 2009).

2.1.1 Characteristics of Owner

Owner/managers' characteristics of a firm are mentioned in prior research as owner/managers' education, experience, gender and age. These indicators have been reliably supported to impact on firms' access to credit. For example, in terms of education of owners, early empirical research in of 4400 firms of Bates (1990) found that owners who attend a study in the university could access formal credit more easily but this research only focused on bank capital and there is no evidence supporting high education level to improve access to other financial sources in financial markets such as non-bank capital Coleman (2004) proved that managers with education and experience will help themselves to manage and present information that a lender wants to see in their loan application form. To confirm that experience of owners is also important to apply for a bank loan, Thanh et al. (2011) conducted a research into emerging market in Vietnam and they found that owners' lack of experience is normally the probability of bank loan rejection.

In terms of gender, Yaldiz (2011) argued that gender of owner/managers also impacts to access to formal credit. The result of this research showed that business women seem to be better educated and more talented compared to business men. Consequently, female owner/managers are likely to have more ability to access formal credit than male owner/managers. In addition, this research also found that owner's age and working experience can support the firms to reduce their financing obstacles when they apply for formal credit. Moreover, Nakano & Nguyen (2011) took a different approach to analyze owner/managers' age and they argued that older owner/managers are more risk-averse and prefer to use more formal credit than informal credit.

In brief, owner/managers' characteristics should be considered an indicator which affects the ability to access formal and/or informal capital of the firms. However, this research proposes one more indicator of owner/managers' characteristics: financial literacy of owner/managers, a main indicator which impacts on SMEs' choice and access to external financing sources.

2.1.2 Characteristics of Firms

Various researches have pointed out that characteristics of firms such as firm's size, firm's profit, firm's age, and location of the firm are energetic indicators of firms to approach credit. According to Beck, (2007) and Beck, et al., (2006) size of firms is a vital indicator of firms' financing obstacles especially micro firms and small firms. It is not difficult to understand because this issue can be explained by theoretical models related to fixed transaction cost and information asymmetry problems. For example, Beck and Levine (2004) proved that normally small firms use informal sources to finance their investment such as moneylenders or their relatives and their friends because they are regularly informational opaque, whereas it is easier for larger firms to access formal external financing sources from stock markets, commercial banks and other financial institutions because they raise fund relatively informational transparent. Consequently, large firms face fewer constraints when looking for credit than small firms and large firms are likely to have more opportunities to access and choose alternative financing sources. In an empirical study, Black (2012) showed that firms with small size have a high signal of risk level related to credit and bankruptcy. Therefore, banks and other formal credit sources which are risk-averse have limited financing for these small firms. Besides, Coleman, (2002) proposed that profit of the firms has also been found to be critical to access to formal credit.

Age of a firm has also been found to be a factor which affects financing constraints and it is also related to the information asymmetry problems in financial market. Results from some empirical research showed a positive relationship between firm's age and holding debt from formal sources (Akoten, et al., 2006; Beck, et al., 2006). Hence, young firms such as newly-established firms are likely to seek informal than formal financing sources. However, Rand, (2007) found different result with a negative relationship between age's firm and formal source of credit and it's the same as a result of the study of Le, (2012) which argued that old firms are preferred to use their internal capital to finance for financing themselves as the first choice and this result also supports evidence for pecking order theory (Myers, 1984).

In developing countries or emerging markets, the role of networking can be used as a tool to reduce the problem of information symmetries between lenders and borrowers (Shane & Cable, 2002). Networking and relationships are an effective pattern for SMEs to access external credit and they support SMEs' access to credit. For instance, Rand, (2007); Safavian & Wimpey (2007) and Straub (2005) found that networks have positive relationship with low cost of capitals because lenders rely on their observation and information of profitability performance that they pick up through contact over time with SMEs. Moreover, Bougheas, et al., (2006) proved that firms have good networks and energetic relationship are less likely to face financing constraints. It is akin to the result of the empirical study of Le & Nguyen, (2009), in which there is a significant and positive association between firms' relationship and accepted bank loans, but it does not impact on the amount of bank lending approval. Furthermore, firm's location and ownership types also contribute to financing obstacles. Yaldiz (2011) and Gine, (2011) mentioned different locations such as big city or small city or country side which also impact on the sources of financing credit of the firms and the transaction cost to evaluate firms' creditworthiness.

2.2 The Role of Owner/managers' Financial Literacy in External Financing Sources

To illustrate how owner/managers' financial literacy could link with financial decision-making choices of external financing and access to credit of SMEs, we start with the definition of financial literacy. Noctor et al., (1992) first defined "financial literacy as the ability to make informed judgments and effective decisions related to the use and management of money". In this definition, people's ability to make judgment and decisions is the main priority. After that, according to the Jump$tart Coalition for Personal Financial Literacy (Mandell, 2008), financial literacy is a combination of knowledge, skills and actions: 'Financial literacy is the ability to use knowledge and skills to manage one's financial resources effectively for lifetime financial security'. This comprehensive definition has been used by Hung, et al., (2009). Accordingly, financial knowledge is reflected in perceived financial knowledge and impacts of financial skills and it helps manage and distribute efficient financial resources. It could be understood as people with financial literacy know how financial systems work and it is also an important foundation for financial skills such as negotiating terms, navigating low cost facilities and this is also supported by researchers who believe that being able to make the right decisions is an additional component. For example, Association of Chartered Certified Accountants, (2006) and Johnson, (2004) confirmed the view that financial literacy clarifies variances in access to credit by borrowers. Moreover, Lusardi and Tufano (2015) and Stango and Zinman (2009) also proved that people with low level of financial literacy tend to borrow at higher interest rates and participate less in formal financial systems. To support the use of formal credit related to financial literacy, Cole et al. (2009) and Hilgert et al. (2003) found that there is a positive relationship between financial literacy and using bank services and it also strongly influences banking behaviour. Particularly, Hilgert et al. (2003) stated that individuals with lower levels of financial literacy may have less interest in financial matters, or have different discount rates with higher interest rates when they touch a loan. This implies that the level of financial knowledge tends to influence attitudes, financial behaviours that in turn affect the cost when they approach or use financial services.

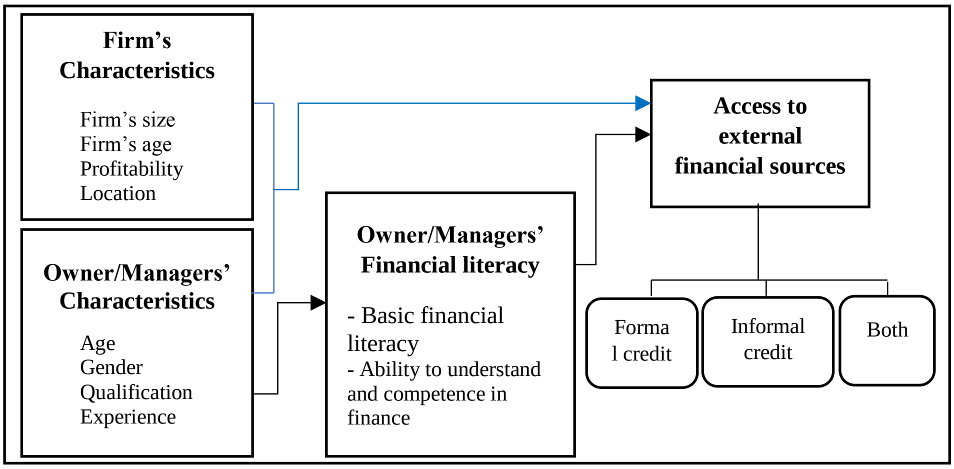
Obviously, SMEs can gain benefits from owner/managers who have financial knowledge. They can diversify portfolios in financing resources and utilize facilities of loans from financial institutions. There is some evidence to support the existence of relationship between financial literacy and access to financial products such as formal credit. For example, the study by Miller et al. (2009) pointed out that lack of financial literacy is often diffidence to access financial products and SMEs also fail to use them. Beck et al. (2007) argued that those who are not familiar or comfortable with products will not demand them. Calvert et al. (2005) also proved that those with high level of basic and sophisticated financial literacy are more likely to participate in financial markets with risky assets and they also invest more efficiently. Therefore, Lyons et al., (2006) stated that financial education can improve perceived financial literacy and there are consistent findings of a positive relationship between financial knowledge and access to credit. In addition, Coleman, (2004) also pointed that owner/managers with education and experience could drive them to better prepare and present a loan application in the form that a lender wants to see. Hence, it provides SMEs with an opportunity to know how to approach funding from financial markets through exploring what requirements from the third parties to support their capital.

Accordingly, SME owner/managers' financial literacy plays a critical role and might have effect on the accessibility of financing sources.

3. Development of Framework and Implementation

This research proposes a framework (figure 1) in which owner/managers' financial literacy is a critical indicator in financing constraint problems with SMEs. Particularly, inside this framework financial literacy is divided into two components which are basic financial literacy and ability to understand and competence in finance of owner/managers' SMEs besides other factors such as firm's characteristics and owner/managers' characteristics.

Figure 1. Financial Literacy and Access To Extremal Financial Sources of SMES



Source: Researcher developed

The data will be assembled from primary and secondary data. Primary data is provided by business owners or top managers of firms via telephone and face-to-face interviews using paper-based questionnaires. This part consists of main characteristics of the owner/managers of SME section such as financial literacy questions, experience, qualification, and information about the access to credit of firms such as formal credit, informal credit or both. Secondary data is also collected from financial statements of the firms which cover characteristics of firm section.

After being completed successfully, data will be coded and analyzed through statistical descriptive analysis. Regression analysis is also run to test the hypotheses to achieve objectives. Particularly, accessing financing sources can be modeled as a dichotomous dependent variable which is used to access formal credit, informal credit and both. All of these three variables are dichotomous ones taking the value of 1 if SMEs participate and 0 if otherwise. According to dependent variables, researcher proposes to use one of the models such as a linear probability model, logit and probit model to capture the existing relationship between variables in the access to financing sources of SMEs. In addition, this paper also estimates the relationship between financial literacy and owner/managers' characteristics by Ordinary Least Squares (OLS) model.

3.1. Objectives

The main objective is to propose a conceptual framework to examine the relationship between financial literacy and access to financial sources in emerging markets.

Specifically:

(1) *To measure the level of financial literacy of SME owners or managers*

(2) *To estimate the relationship between financial literacy and SME owners/managers' characteristics*

(3) *To examine the impact of owners/managers' financial literacy on the access to formal and informal financing sources of SMEs*

(4) *To identify the differences in financial literacy of SME owners/managers in making decisions for a firm to select what kind of financing such as formal and informal credit.*

3.2. Empirical Model

$$FL = \alpha_0 + \alpha_1 X_i + \varepsilon_i \quad (1)$$

$$AF = \beta_0 + \beta_1 FL_i + \beta_2 Y_i + \beta_3 X_i + v_i \quad (2)$$

FL: the level of financial literacy of SME owner/managers (basic financial literacy and competence in finance)

X_i: SME owner/managers' characteristics (age, gender, qualification and experience)

AF: Access to financing sources (formal credit, informal credit or both)

Y_i: Firm characteristics (Firm size, age of the firm, firm profit ability, firm location and industry)

ε_i, v_i: random error term

In equation 1, the author uses OLS to estimate the relationship between financial literacy and SME owner/managers' characteristics. The independent variables comprised in the model are age, gender, qualification and experience of the owner/managers.

In equation 2, this paper proposes one of the models such as linear probability model, logit and probit model to identify the relationship between the access to external financial sources and financial literacy of SME owner/managers. The independent variables included in this model are firm's characteristics (firm's size, firm's age, profitability, location, industry), financial literacy of owner/managers, and owner/managers' characteristics (age, gender, qualification and experience).

Table 1: List of Variables Used in Empirical Models

Equation 1:	
Dependent variables	
○ Basic financial literacy	Scale variable
○ Competence in finance	Scale variable
Independent variables	
SMEs owner/managers characteristics	
○ Age	Dummy variable: 0: under 35 age; 1: over 35 age
○ Gender	Dummy variable: 0: female; 1: male
○ Qualification	Category variable (0: under diploma degree; 1: diploma/university degree; 2: post graduate degree)
○ Experience	Scale variable (years)
Equation 2:	
Dependent variables	
○ *Access to formal credit*	=1 if accessed formal credit; otherwise = 0
○ *Access to informal credit*	=1 if accessed informal credit; otherwise = 0
○ *Both of them*	=1 if accessed both of formal & informal credit; otherwise = 0
Independent variables	
Firm characteristics	
○ Firm size	ln (Total assets); ln (Net sales)
○ Age of the firm	Scale variable (years)
○ Firm profitability	EBITD/Total assets
○ Firm location	Dummy variable: 1 = urban; otherwise = 0
○ Industry	Category variable (0: manufacture; 1: retails; 2: services)
Financial literacy of SMEs owners/managers	
○ Basic financial literacy	Scale variable
○ Competence in finance	Scale variable

Source: Researcher developed

3.2. Measuring Financial Literacy of SME Owner/Managers

Financial literacy has been defined and measured in several ways. However, there is a lack of consensus on financial literacy definition although the importance of financial literacy has been widely acknowledged. Due to a wide range of conceptual definitions, various methods have been used to measure financial literacy. For example, in prior surveys (the Washington Financial Literacy Survey, the Jump$tart Coalition Survey, or the Survey of Consumer Finances 2001 module) which were deliberately designed to measure financial literacy, detailed information about individuals' financial education and variables associated with financial decision making were seldom collected sufficiently. Recently, some sets of questionnaires were designed to measure the level of financial literacy of individuals, but the content of the questionnaire do not focus on specific purposes but financial concepts in general (Lusardi, 2006; Lusardi and Mitchell, 2007b; van

Rooij, et al., 2011). Therefore, this paper proposes a set of questionnaires (table 2) to measure financial literacy of owner/managers in the context of accessing financing sources. This questionnaire was divided into two main parts. The first part measures basic financial concepts according to Lusardi, (2006). The second part assesses the ability to understand finance and competence of SME owner/managers. The author relied on OECD, (2005) to select the questions and these questions were adjusted to fit the specific purposes of SME owner/managers and they are also appropriate for financial instruments and lending terms in emerging markets.

Before applying financial literacy in the model to run regression, factor analysis and Cronbach's alpha test should be used because these techniques provide insight into the interrelationship and they also assess whether these factors are internal consistent reliability or not.

Table 2. The Questionnaire to Measure Financial Literacy of SME Owner/Managers

Basic financial concepts *(select the correct answer)* Q1. Compound interest Q2. Inflation Q3. Risk diversification Q4. Money illusion
Competence in finance *(raise your opinion)*
Q5. Do you receive financial records of payment methods or financial products/services? Do you read these at all? And how well do you understand them?
Q6. For financial products or services that you use, please indicate how well do you know about the fees and charges that apply (business account, payments and cash management, working capital financing, short-term lending, project finance, leasing)? Q7. When arranging a new financing sources, do you take any advice from experts and shop around? Q8. How well do you understand the following terms? (credit capacity, collateral, repayment period, interest charge)

Source: Researcher developed

4. Conclusion

In this paper, the author expands a framework to examine and understand the factors that drive SMEs to access financing sources in emerging markets and proposes two main points. First, SMEs must face lack of information to use and access financial instruments in financial markets and information asymmetry also contributes to their financing constraints. Second, the level of owner/managers' financial literacy tends to influence attitudes, financial behaviors that in turn affect the cost when they approach or use financial instruments and financial services. Hence, SME owner/managers' characteristics including their financial literacy might have effects on accessibility of financing sources.

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