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NIROSHA WELLALAGE
UNIVERSITY OF WAIKATO

GEETA DUPATI
UNIVERSITY OF WAIKATO

FITRIYA FAUZI
UNIVERSITY OF WAIKATO

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THE AUTHORS

NIROSHA WELLALAGE
University of Waikato

GEETA DUPATI
University of Waikato

FITRIYA FAUZI
University of Waikato

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Nirosha Wellalage
Geeta Dupati
Fitriya Fauzi

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ABSTRACT

The study compares the impact of the commercial environment on external financing of female owned small medium enterprises (SMEs) compared to those that are male owned in seven South Asian countries. The region exhibits weak institutional and regulatory regimes, high levels of corruption and direct government interventions which result in expropriation of assets and profits from SMEs. It is likely that such commercial environments add to the risk of lending to SMEs and this may further manifest in a gender bias toward males. This study uses a unique dataset of over 5000 firms from World Bank Enterprise Surveys and combines this with additional information drawn from World Bank macro-economic data. The data is then to be studied using interval regression and logit regressions. This study's finding is partially consistent with previous research in the gender and external financing field. Similar to other studies low access to formal external financing is identified as a constraint to female SME owners compared to male counterparts in the South Asia region as well. However, contradictory to other studies this research indicates that once females have access to formal financing they use a high proportion of formal financing in their firm capital structure than their male-counterparts. A gap in accessing external finance for women owned SMEs presents both a waste of human resource and a lost potential to lift standards of living, presenting an opportunity for reform. To the extent that institutional factors are particularly burdensome for the female run business, or have a direct gender angle, addressing these issues will be particularly beneficial for women entrepreneurs trying to ensure external financing accessibility. Further, governments may need to promulgate different loan criteria for female-firm owners or establish institutions that can support female-firms' borrowing. Further, non-governmental organizations and other non-profit organizations may play an important role in home-based female lead firms in regard to their financing, training or capital requirements.

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INTRODUCTION

The main aim of this paper is to identify the institutional obstacles faced by female SME owners compared to their male counterparts in accessing external finance and to recommend means of enhancing female owned SMEs accessibility to external financing in South Asia countries[1]. One important dimension in the access to the finance debate, which has been less analyzed, is the gender gap (Aterido, Beck, & Iacovone, 2011). Women make up more than half of the population in Asia, and the United Nations estimates that the Asia-Pacific economy would earn an additional $89 billion annually if women were able to achieve their full economic potential ("UN Women's flagship report: 2011-2012 Progress of the World's Women: In Pursuit of Justice," 2013). Institutional development can have a differentiated effect on female and male owned SMEs. Empirical evidence supports the importance of the institutional environment on corporate choices of financing: using cross-country analysis, La Porta et al. (1997), Demirguc-Kunt and Maksimovic (2001), Booth, Aivazian, Demirguc-Kunt, & Maksimovic (2001) , Rajan & Zingales (1995) and Beck et al. (2008) present evidence that the country's legal and financial environment influences firm's use of external financing. Nevertheless, the magnitude of institutional imperfections that exist in each country varies widely and depends entirely on the level of its institutional development (Carvalho, 2008). The situation, however, may become grimmer when the issue of gender is considered in the analysis. While the literature on gender and entrepreneurship is extensive, very little work exists on this area in the developing world. Although, there are other reports or studies which touch on gender and SMEs no serious attempt has been given to the issue of external financing. Further, because of idiosyncratic features of the South-Asian economy, the need for a context specific study of this nature is important to generate baseline stylized facts to help policymakers design better credit programmes for these enterprises. Similar to La-Porta, Silanes, Shleifer, & Vishny (1997) and Demirg-Kunta & Maksimovic, (2001), we apply institutional theory to investigate the differences of the factors that have potential to impact on firm's accessibility to external financing in the South-Asia region, for female and male led firms using a firm level data source, the World Bank Enterprise surveys, conducted by the World Bank.

[1] According to the United Nations geographical region classification, South Asia comprises the countries of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka

Our results show that, female SME owners have less access to formal external financing for their investments, particularly formal bank financing and non-bank financing. This study confirms that a weak institutional environment creates more constraints on female SME owners to access external debt compared to their male counterparts. But after control for various firm characteristics and institutional variables, results indicate that female owned SMEs show that once they have access to formal sources of external financing female SME owners use a high proportion of formal financing in their capital structure. Hence, this study finding only partially confirms the prior expectation that female SME owners substitute bank finance with other sources of external finance, especially in countries with an under developed institutional environment. Our study is noble as it contributes to the literature by providing evidence of the effect of the institutional environment on accessing external financing of male and female owned SMEs in South Asia.

The next section reviews the role of SMEs in South Asia and prior research, and is followed by discussion of data, variables, methods and procedures used for this empirical study. The results and conclusions then follow.

SMEs in South Asia

Women owned enterprises have tremendous potential for empowering women and transforming society in South Asian countries. However, researchers found that this potential remains largely untapped, with less than 10% of the entrepreneurs in South Asian countries being women (Sinhal, 2005). Consistent with that, an Asian Development Bank study indicates that there are only 8%-9% formal SME enterprises owned by women in South Asia when compared to 38%-47% formal SME enterprises owned by women in East Asia, Central Asia and Eastern Europe (*Women Entrepreneurs in Asia and the Pacific*, 2013). An Indian based study Kaur and Bawa (1992) finds that only 10% of female entrepreneurs received funds from government agencies and nationalized banks and 54% of women entrepreneurs had started their business with their own personal savings and some financial assistance from their spouse. This finding is substantiated in other South Asian countries. As an example a Pakistan SMEs study indicates that middle-level female entrepreneurs in Pakistan were financed by their own savings or borrowings from their relatives. As a figure, Das (2000) indicates that more than 50% of the

Pakistan female entrepreneurs used their own funds or funds borrowed from their spouse or family to set up their business.

SMEs in South Asia were severely restricted by the slow development of supporting institutions, the banking system, the legal framework and, most of all, by the government's regulatory processes in a weak institutional environment. The weak rules and regulations may push the entrepreneurs to the informal sector of the economy, restricted formal financing accessibility and business growth. With undeveloped rules of the game and under a non-conducive environment, all economic agents, SMEs in particular, have to decide whether, and to what extent, they wish to operate in the formal economy. This decision is based on the incentive system generated by the legal and institutional mechanisms operating in different countries. In many cases, firms operate in South Asia under the weak legal and institutional structures and a wide variety of rules and regulations, corruption and informal payments create the incentive for SMEs to restrict access to formal external financing.

REVIEW OF LITERATURE

Using institutional theoretic viewpoint, Judge, Douglas and Kutan (2008) argue that behaviour of organizations has significant impact on societal systems. For example, institutions have governance structures based on rules, norms, understandings and routings (March & Olsen, 1989) whose social patterns are characterized by a standard sequence of interactions (Ronald & Meyer, 1991). Therefore, firms' performance depends on its legitimacy to institutional structures rather than on the efficiency to which it co-ordinates and controls its productivity. As an example, factors that can influence firms' legitimacy also have potential to improve firms' accessibility to external financing (Le, Venkatesh, & Nguyen, 2006). However, Scott (2001) finds that the effect institutional structures have on firms is rather heterogeneous, depending on their level of adoption. Prior research has emphasized the importance of using an intuitional perspective for better understanding of the firm behaviour in transitional and developing economies (Hoskisson, Lau, & Wright, 2000; Meyer & Nguyen, 2005). It has been assumed that the institutional context will influence the nature, pace of development and behaviour of the business owners (Welter & Smallbone, 2011) for uncertain economic environments and unstable political situations in developing economies, suggests firms will face obstacles when accessing external sources of funding. Perhaps not surprisingly in the absence of effective institutional

structures, firms in the developing and transitional economies tend to rely on alternative strategies, such as, connections with political parties and/or networking with friends who are in high places or have power to influence decision makers in order to gain legitimacy (Peng & Heath, 1996; Tsang, 1994).

Institutional factors are important country-level characteristics that have potential to explain cross-country variations in firms that face financial obstacles, even after controlling cross-country per capita income variations (Beck et al., 2008). Klapper et al. (2006) add that country's GDP level also has an effect on the entry of new firms protection and access to external finance. The issues stated above do provide support to the presumption that firms in high GDP countries have easier access to external financing. Furthermore, a well-developed banking system is also a contributory factor in increasing firms' accessibility to finance and economic development (Peachey & Roe, 2004). For example, in low GDP growth rate countries mainstream commercial banks tends to focus on the most profitable businesses only, thus reducing the opportunity for small-scale firms' access to bank credit. Corporations and businesses often deal and/or negotiate with governments (Rodriguez, Uhlenbruck, & Eden, 2005) regarding public sector contracts, lobbying activities, negotiating loans and other issues of interest. Faccio (2006) reports that political connections also play a significant role in allocating capital or credit from financial institutions to micro-firms in some countries. Both, Chakravarty and Xiang (2011) and Firth, Lin, Liu and Wong (2009), report that political/government connections help both micro and large firms in emerging markets to access finance. For example, government supported Korean *chaebol* firms have higher debt in their capital structure than their counterparts because *chaebols' have* high accessibility to external financing (Fattouh, Scaramozzino, & Harris, 2005). As a consequence, informal ties and relational governance have tended to fill the "institutional void" in countries which have inadequate formal institutional infrastructures (Khanna & Palepu, 1997). The nature of property rights existing in different countries is the reflection either of the regulation and/or negotiation initiatives. Acemoglu and Johnson (2005) postulate that the level of property rights depends on the political regime of the country, whether the country has a democratic society or an oligarchic society and/or, the extent to which certain groups of people can dictate policy and the nature of institutional arrangement that exist. Hence, SMEs in these countries also have less access to bank financing because of weak property right regulations. Moreover, the level of property rights that exist in a country is

an important determinant of the nature of loans that are offered, how loans are structured and how they are priced (Bae & Goyal, 2004). In countries where regulatory environment is more supportive of the start-up and operations of new businesses, firms in those countries also enjoy better or easier access to external financing. For example, Cull and Xu (2005) report that reliance on long-term external financing is high in countries with efficient legal systems, an active stock market and a large banking sector.

Research shows that investors are more likely to incorporate businesses in countries that have better-developed financial and legal systems, strong creditor and shareholder rights, and effective bankruptcy processes (Demirguc-Kunt & Maksimovic, 2001; La-Porta et al., 1997). Using firm-level data from 40 countries, Beck et al.(2008) reported that the development of a country's legal system is a good indicator of firms' accessibility to external finance. La-Porta et al.(1997) using data from 49 countries report that countries that have weak investor protection also have a smaller and less developed capital market as well. Consequently, the levels of financial intermediation existing in those countries are low as well. The positive role of banks in monitoring performance (Levine, 1997; Levine, Loayza, & Beck, 2000) and the existence of an efficient financial market (where information is revealed quickly to liquidity holders) are a prerequisite for accessibility to external sources of financing. Beck et al.,(2008), reported firms in developing countries with poor institutional settings use less bank finance and external borrowing increases with the level of private property rights in different country.

Apart from the above institutional factors political stability is also an important institutional index which impacts on private entrepreneurs growth and accessibility to finance (Lemmon, 2012). Entrepreneurship in non-conflict, industrialized contexts is underpinned by capital accumulation, concentration of assets, sufficient degrees of sophistication in infrastructure development and the mode of governance, and a high level of social cohesiveness which collectively allow for further accumulation of both physical and social capital. The success of a developmental state can only be measured if its actions are conducive to productive entrepreneurial activity. And, it is only under a successful developmental state that non-productive entrepreneurship is discouraged. This is unlikely to occur under a condition of conflict, civil conflict, or enduring war. Conflicts also have many consequences on economic development (Chen, Loayza, & Reynal-Querol, 2007). Most of the literature analyzing the effects of conflict deals with issues of security and reconstruction at the macro level and with the

role of the state agency (Collier, 1999; Cramer, 2006). Much less has been said about the micro-economic impact of conflict and the extent to which it deters or slows down entrepreneurial activity. The indirect effects of conflict are related to the institutional, market, political and distributional disruptions which might indirectly affect the likelihood of engaging in entrepreneurial activities. Conflict might indirectly affect the potential to start entrepreneurial activities through the destruction of social networks due to forced displacements and migration (Amuedo-Dorantes & Pozo, 2006), and migrant refugees are likely to lose collateral and resources they owned before they were forced to leave. This leads to limited access to formal finance. Hence, we assume that conflict can have significant impact on SME external financing accessibility.

Interestingly, within a weak institutional environment, entrepreneur characteristics play a significant role on firms' financing decisions. Using French, British and West German firms, Watkins and Morton (1982) identified that when considering and approving bank loans, financial institutions were more concerned about the managerial capability of SME owners than about compliance with laws and regulations. Owner gender is one of the most important entrepreneur characteristics which may impact on access to external financing. A number of studies extensively examine the gender of SME owners and the impact of this on firms' external financing (Cavalluzzo & Wolken, 2005; Cavalluzzo, Cavalluzzo, & Wolken, 2002; Jones & Tullous, 2002). In particular, one UK-based study explains that female SME owners are approximately two percent more likely than men to face difficulties in raising finance and also two percent more likely to find it impossible to raise the finance that they expect (Irwan & Scott, 2010). Even in a USA study Cavalluzzo & Wolken (2005) found that gender is associated with probability of loan denial. Due to the predominance of home-based entrepreneurs, female-owned SMEs are more common in the Asia and Pacific regions ("Women owned SMEs in Asia Pacific, Middle-east and Africa: An Assesment of the Business Environment," 2010). Credit constraint is the major barrier to the growth of female-owned small businesses in developing countries including Asia("Strengthening Access to Finance for Women-Owned SMEs in Developing Countries," 2011). Anecdotal evidence points to a variety of factors, including the various limitations for and characteristics of women owned business, such as women entrepreneurship skewed towards smaller firms and riskier ventures (Coleman, 2000), young firms (Riding & Swift, 1990), women owned-SMEs tend to be concentrated in less profitable industries (Minniti,

2009), more likely to be in the informal sector (Hallward-Driemeier & Rasteletti, 2010) or home-based (*Investment Climate Surveys*, 2008) which leads to financial institutions not lending to women-owned SMEs. Apart from the fact that they are more likely to be working part-time or earning less than men, women find it more difficult to accumulate personal savings (Marlow & Patton, 2007). Conversely, women try to access smaller funds, because so-called ‘‘feminine’’ occupations are less capital-intensive (D’Espallier, Guérin, & Mersland, 2010; Guérin & Palier, 2006). Nevertheless, a perception of higher risk and cultural bias amongst loan officers is often reported by local banks which also limited female SME owners’ access to external finances (Muravyev, Talavera, & Schäfer, 2009). Banks prefer to finance larger projects that are already established, a point that works in favour of men. Because of this adverse selection, the average quality of the businesses run by women is lower, leading to a self-reinforcing discrimination mechanism (Scalera & Zazzaro, 2001). Using Sri Lankan micro-enterprises, Mel et al.(2009) show that the gender gap creates differences in ability, risk aversion, entrepreneurial attitudes and reporting behaviour in female-dominant industries and leading to differences in financing.

There are several research attempts to investigate access to finance for female SME owners (Carter & Rosa, 1998; Green, Brush, Hart, & Saparito, 2001; Read, 1998). However, Carter and Rosa (1998) argue that although finance constraints for female entrepreneurs has been a recurrent issue in policy debates, no consensus has been reached on the question of whether disadvantages exist for female entrepreneurs accessing finance. On the other hand, behavioural patterns of female entrepreneurs such as the level of risk aversion of female SME owners may be higher than male SME owners and those females are reluctant to apply for external financing. South Asian based study indicates that while female SME owners do have access to credit via formal financial institutions, it is often in small amounts ("Human Development in South Asia," 2000). However, gender is only one of a number of variables that affect the external financing accessibility (Carter & Rosa, 1998). Differential access to credit may of course be a reflection of differences in the choice of sector, educational level or the amount of loan requested (Sinhal, 2005). On the other hand, sector choices, education level and risk aversion tend to be influenced by gender. Hence we could say external financing accessibility differences are at least indirectly motivated by gender. Women, in particular the less educated ones in South Asia[2,] also find it

[2] The gender disparity in primary education completion rate in South Asia with 87% of boys completing primary school vs. 83% of girls in 2009. Among all other regions South Asia had a large gender disparity in 1999 (14.5

more difficult to get financing from banks because of inadequate information and information asymmetry in weak institutional environment. Developing countries with weak institutional environment, sometimes, credit may be available for women through several schemes but there are bottlenecks and gaps, and the multiplicity of schemes is often not adequately listed nor is there networking among agencies (Vishwananthan, 2001). Apart from that South Asian female SME owners suffer from weak institutional environment that cause limited access to the formal external financing for their business. As an example poor enforcement of financial rights and the existence of unequal inheritance rights and consequently poor access to community and social resources limited access to bank financing which usually request collateral. In many South Asian countries, women face unequal inheritance practices and laws, discriminatory laws on ownership of property or access to bank loans, or discriminatory practices by banks.

DATA AND METHODOLOGY

Data to explore the relationship between gender and enterprise access to credit, we use the data collated from the Enterprise Surveys conducted by the World Bank (*Enterprise Surveys: What Business Experience*, 2012) for seven South-Asia countries (Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka). The Enterprise Surveys have been conducted over the past 12 years in over 135 countries with consistent survey instruments. It provides the world's most comprehensive company-level data in emerging markets and developing economies[3]. Since 2002, the World Bank has collected this data from face-to-face interviews with top managers and business owners in over 130,000 companies. To date, over 73,000 interviews in 121 countries have taken place under the global methodology (Enterprise Surveys, 2013).

The World Bank survey includes data for small, medium and large sized firms. The Enterprise Surveys offer several advantages for our purpose. Firstly, the surveys collect comparable information for several firm characteristics across all the countries. This comparability allows us to document cross-country and within-country profiles of firms that have female ownership participation. Secondly, the surveys collect information on all sources of firm's financial sources and each firm's financing proportion from each source. Thirdly, these

percentage points) but decreased the difference to 3.2 percentage points in 2009 (UNESCO Institute for Statistics in EdStats, 2011).

[3] See www.enterprisesurveys.org for more details. The Enterprise Surveys implemented in Eastern Europe and Central Asian countries are also known as Business Environment and Enterprise Performance Surveys (BEEPS) and are jointly conducted by the World Bank and the European Bank for Reconstruction and Development.

surveys reach a substantial number of countries across all the regions of the world. This will help future research expansion.

The country-level macro-economic data used in this study were collected from various sources. The information regarding "ease of doing business" in different countries will be sourced from the World Bank website (*Economy Rankings*, 2012). Each country's GDP growth rate will be collated from the Central Intelligence Agency (CIA) Fact Book reports (*The World FactBook*, 2012), each country's interest rate is collected from the World Bank website (*Real interest rate (%)*, 2013).

Dependent variables

The dependent variables used for study are captured by the following question in the survey:

> "Over fiscal year, [insert last complete fiscal year] please estimate the proportion of this establishment's working capital that was financed from each of the following sources: Internal funds or retained earnings, owners' contribution or issued new equity shares, borrowed from banks (private and state-owned), borrowed from non-bank financial institutions, purchase on credit from suppliers and advances from customers, other (money lenders, friends, relatives, bonds, commercial papers etc.)"

Dependent variables are divided into two groups: Such as accessibility of financing and proportion of financing by each source. This will help to find out both accessibility of financial sources and the limit of accessibility of proportion of each financing source. This is important, because access to and use of financial services by entrepreneurs is of increasing concern to policy makers across the globe.

Dependent variable for accessibility of external financing:

Over fiscal year, if firm working capital was financed from bank the A_BANK variable takes value "1", otherwise take value "0". If firm has access on non-bank financing (A_NONBANK) takes value "1", otherwise take value "0". If firm has access on credit (A_CREDIT), take value

"1", otherwise take value "0". Finally if firm has access to other methods of financing (A_OTHER) take value "1", otherwise take value "0".

Dependent variable for proportion of financing:

This study uses a similar method as used by Beck et al. (2010) in their cross-country bank SMEs bank financing study. The dependent variable P_BANK is used as a proxy for the bank finance obtained by the firm. This variable takes percentage of bank financing use by the firm in the last fiscal year as working capital. The dependent variable P_NONBANK is used as a proxy for the non-bank finance obtained by the firm. This variable takes percentage of non-bank financing use by the firm. The dependent variable P_CREDIT is used as a proxy for the credit finance obtained by the firm. This variable takes percentage of credit use by the firm. The dependent variable P_OTHER is used as a proxy for the other finance obtained by the firm. This variable takes percentage of other financing use by the firm.

Explanatory variables

We use two categories of independent variables, that is, firm-level characteristics as well as country-level indicators.

Firm–Level Characteristics

A number of studies extensively examine the gender of SME owners and the impact of this on firms' external financing (Fraser, 2005; Jones & Tullous, 2002; Treichel & Scott, 2006). Hence, this study uses Female (FEMALE) variable as the main explanatory variable. This FEMALE variable takes value "1"if firms have female owners, otherwise "0".

Prior studies have identified firm size[4] to be an important variable that statistically significantly affects external financing (Chakravarty & Xiang, 2011). Based on this view, we use the natural logarithm of total employees as a proxy for firm size. We use three dummy variables to represent type of business. SMALL is equal to "1" if firms have employees between 5 to 19 people, otherwise "0". MEDIUM is equal to "1" if firms have employees between 20 to 99

[4] Followed by World Bank Survey classification as small if they employ between 5 to 19 people; medium if firms have employees between 20-99; and large if firms have more than 100 employees.

people, otherwise “0”. LARGE is equal to “1” if firms have more than 100 employees, otherwise “0.

African-and-Latin American-based SME studies have identified that young firms show higher levels of growth and high access to external finance compared to the mature firms (Mead & Liedholm, 1998). Therefore, this study assumes relationship between firm financing accessibility and their proportion and firm age. Therefore, we use the natural log of firm age (ln(AGE)) as a proxy for age. It is assumed that younger firms will have a higher need to access external financing to develop and grow compared to mature firms.

Entrepreneurs’ activities have impact on ongoing or post conflict (Binzel & Bruck, 2007). Conflicts have impact on formal institutions, access to finance, social and capital of the state (Ciarli, Parto, & Savona, 2010). Entrepreneurs in fragile states often lack the formal skills needed to access loans and grow their business. Entrepreneurs often lack formal training to prepare the business records needed to secure loans, a challenge that points to one of the major obstacles SMEs face. Hence, this study captures the conflict impact on SMEs financing using CONFLICT variable. The CONFLICT variable takes value “1” if firms are from conflict affected areas; otherwise it takes value “0”. Firms’ geographical locations may have significant impact on firm finance accessibility. This may be because firms from capital cities or high population density areas may have many banks and other financial institutes. This increases the access to financial services for the SME owners in capital cities compared to the rural SME owners. Hence, to identify firm geographical location impact on firm financing and their proportion this study uses CAPITAL variable .This variable takes value 1, otherwise value 0.

The initial investment and capital requirement of the firm may depend on the firm’s operating industry. As an example firms operating in a manufacturing industry may require more capital than “feminist” type service firms such as beauty salons. Enterprise survey only categorized firms as manufacturing, retail and other. Hence, this study uses industry variable as categorical variable and which assign value 1 for manufacturing firms (MANU), value 2 for retail firms (RETAIL) and value 3 for other firms (OTHER). Next variable is government relationship (GOVERNMENT). This measure is the percentage of total senior management’s time spent on dealing with requirements imposed by government regulations. This study expects positive relationships with external finance accessibility/proportions and government relationship variables, because if firm follows rules and regulations it is easy to access external financing.

Next, legal forms of establishment may have significant impact on external financing accessibility. As an example Brown, Chavis, and Klapper (2011) finds that sole proprietorships are less likely to use formal financing and more likely to rely on informal sources. This study categorized "legal form of business" variable into 6 categories. If a firm is a Shareholding Company with shares traded on the stock market, this takes value 1. If a firm is a Shareholding Company with non-traded shares or shares traded privately- (public or private), this takes value 2. If a firm is sole proprietorship, this takes value 3, partnership firms take value 4 and Limited Liability companies are assigned for value 5. Access to finance, in particular, is important for new business start-ups. Some governments have put in a place a number of interventions to address this issue. Hence, this study uses government supports (hereafter SUPPORT) as explanatory variable. This variable takes value "1" if government or other institute provides start-up funds. Otherwise this takes value "0".

Country-Level Indicators

According to the World Bank report, economies are ranked on the "ease of doing business" from 1 – 183. A high ranking means that the regulatory environment is more conducive to the start-up and operation of businesses. According to the World Bank, the "ease of doing business" index (hereafter EASE) is the average percentile rankings of each country based on ten topics, which are made up of a variety of indicators and equal weight is given to each topic (*Doing Business*, 2011). For each country the ranking is calculated as the simple average of the percentile rankings on each of the following topics: namely, starting a business, dealing with construction permits, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts and resolving insolvency. We propose that a positive relationship would exist between EASE and firm external financing in each country. We use GDP growth rate as a proxy for growth (hereafter GDP). The GDP growth rates were collated from the CIA website (*The World FactBook*, 2012). We use the real GDP growth rate which are adjusted for inflation and expressed as a per cent. We assume a positive relationship between GDP growth rate and firm external financing.

The real interest rate (hereafter INTEREST) of South Asian countries are collected from the World Bank website (*Real interest rate (%)*, 2013). Real interest rate is the lending interest rate adjusted for inflation as measured by the GDP deflator. La Porta et al. (1999),

state that at a country-level, property rights are an important determinant of a firm's accessibility to financing. We use fairness of the judicial system as a proxy for the business environment. Independence of judiciary and jurisprudence are closely associated with economic freedom (La Porta et al., 1999), which it channels through external finance availability and accessibility. The World Bank survey data provided fairness of court system as a categorical variable. Based on the above information, we created three dummy variables as follows: FAIR is equal to "1" if the firm owners feel the court system is fair, otherwise "0"; MODERATE is equal to "1" if the firm owners feel the court system is moderate, otherwise "0"; and UNFAIR equals "1" if firm owners feel the court system is unfair, otherwise "0". To capture the effect of country-level impact on our results, we use seven country dummy variables as follows: C1 is equal to "1" if the country is Afghanistan, otherwise "0"; C2 is equal to "1" if the country is Bangladesh, otherwise "0"; C3 is equal to "1" if the country is Bhutan, otherwise "0"; C4 is equal to "1" if the country is India, otherwise "0"; C5 is equal to "1" if the country is India, otherwise "0"; C6 is equal to "1" if the country is Pakistan, otherwise "0"; C7 is equal to "1" if the country is Sri Lanka , otherwise "0".

Table 3: Descriptive statistics

	All sample (A)					With female owners (B)					Male owners only (C)				
Variable	**Obs**	**Mean**	**Std.D**	**Min**	**Max**	**Obs**	**Mean**	**Std.D**	**Min**	**Max**	**Obs**	**Mean**	**Std.D**	**Min**	**Max**
Dependent variables															
P_BANK	5775	.0325	.1319	0	1	1196	.0491	.1651	0	1	4555	.0283	.1217	0	1
P_NONBANK	5763	.0032	.0392	0	.95	1196	.0039	.0441	0	.75	4543	.0030	.0379	0	.95
P_CREDIT	5763	.0225	.0965	0	1	1196	.0165	0940	0	1	4543	.0240	.0971	0	1
P_OTHER	5775	.0041	.0378	0	1	1196	.0064	.0522	0	1	4553	.0036	.0332	0	.75
Independent variables															
SMALL	5775	.6001	.4899	0	1	1196	.4757	.4996	0	1	4555	.6335	.4818	0	1
MEDIUM	5775	.3206	.5214	0	1	1196	.3620	.5505	0	1	4555	.3086	.5129	0	1
FEMALE	5775	.2079	.4058	0	1										
Age	5772	21.90	13.62	2	164	1195	19.21	14.6	2	164	4553	22.62	13.277	2	135
LnAGE	5772	2.902	.6302	.6931	5.099	1195	2.71	.7039	.6931	5.099	4553	2.951	.6007	.6931	4.905
CONFLICT	5775	.0924	.2897	0	1	1196	.0978	.2972	0	1	4553	.0911	.2877	0	1
CAPITAL	5775	.3189	.4661	0	1	1196	.5242	.4996	0	1	4555	.2656	.4417	0	1
Industry															
MANU	5775	.6893	.4627	0	1	1196	.6145	.4869	0	1	4555	.7108	.4534	0	1
RETAIL	5775	.1390	.3460	0	1	1196	.1421	.3493	0	1	4555	.1361	.3429	0	1
OTHER	5775	.1037	.3049	0	1	1196	.1847	.3882	0	1	4555	.0823	.2748	0	1
GOVERNMENT	4389	-1.6739	2.148	-99.210	4.605	842	-1.221	2.42	-6.907	4.605	3529	-1.789	2.062	-9.21	4.605
Legal form of Business															
LISTED	5775	.0706	.2562	0	1	1196	.1195	.3245	0	1	4555	.0559	.2299	0	1
NONTRADE	5775	.2008	.4006	0	1	1196	.2976	.4574	0	1	4555	.1762	.3811	0	1
SOLE	5775	.5277	.4992	0	1	1196	.3745	.4842	0	1	4555	.5694	.4952	0	1
PARTNERSHIP	5775	.1664	.3724	0	1	1196	.1789	.3834	0	1	4555	.1626	.3691	0	1
LIMITED	5775	.0117	.1078	0	1	1196	.0242	.1538	0	1	4555	.0085	.0921	0	1
OTHER	5775	.0219	.1466	0	1	1196	.0050	.0706	0	1	4555	.0263	.1601	0	1
SUPPORT	5775	.4469	.4972	0	1	1196	.4331	.4957	0	1	4555	.4498	.4975	0	1

Judiciary system															
FAIR	5775	.2819	.4499	0	1	1196	.2734	.4458	0	1	4555	.2843	.4511	0	1
MODERATE	5775	.4905	.4999	0	1	1196	.5083	.5001	0	1	4555	.4849	.4998	0	1
UNFAIR	5775	.1954	.3966	0	1	1196	.1964	.3975	0	1	4555	.1958	.3968	0	1
Country															
AFGANISTAN	5775	.1004	.3006	0	1	1196	.2349	.4241	0	1	4555	.0654	.2472	0	1
BANGLADESH	5775	.2604	.4389	0	1	1196	.2725	.4454	0	1	4555	.2586	.4379	0	1
BHUTAN	5775	.0174	.1310	0	1	1196	.0292	.1686	0	1	4555	.0144	.1195	0	1
INDIA	5775	.3393	.4735	0	1	1196	.1964	.3975	0	1	4555	.3771	.4847	0	1
NEPAL	5775	.0583	.2344	0	1	1196	.0877	.2831	0	1	4555	.0509	.2198	0	1
PAKISTAN	5775	.1338	.3405	0	1	1196	.0484	.2148	0	1	4555	.1558	.3627	0	1
SRI LANKA	5775	.0900	.2862	0	1	1196	.1304	.3369	0	1	4555	.0774	.2674	0	1

Table 3 provides descriptive statistics of the variables used in the analysis column A provides descriptive statistics of full sample. Column B provides descriptive statistics of SMEs which have female owners. Finally column C provides descriptive statistics of SMEs only with male owners. Table 3 column A reveals that, regardless of owners' gender SMEs face great constraint to raise external financing. Among debt sources, banking institutes provide approximately 3.25% of SMEs external financing needs, followed by trade credit (2.25%), provide normal source of the sales cycle in financing working capital, while similar to other countries bank loans reject a more discretionary outside source of external financing in South Asian SMEs as well. Apart from that non-banking institutes provides only 0.3% of financing for SMEs. Other sources of debt include other financing institutes and other individual loans etc. provide 0.4% of external financing needs of South Asian SMEs. Interestingly firms with only male owners show approximately two times lower bank financing in their SMEs capital structure compared to SMEs with both male and female owners. However, SMEs with female owners show high standard deviation of bank financing percentage of their capital structure. It indicates that within this group SMEs shows high variance of bank financing varying between 0% to 100%. Furthermore, non- bank financing variable also show a similar pattern to bank financing.

Trade credit financing shows an opposite relationship to bank financing and non-bank financing. Results indicate that SMEs with only male owners engaged a high proportion of trade credit compared to SMEs with female owners. It may be that male owned SMEs in South Asia mostly engaged with the production of goods and their required working capital may require higher trade credit than service based female owned SMEs. Not surprisingly statistics indicate that female owned SMEs use quasi debt (debt from family and friends) twice as much as the male owned group. It may be that female owned SMEs in developing countries are more likely to be home based and operate within the house hold than male led enterprises (Bruhn, 2009; Mead & Liedholm, 1998), they prefer informal sources of financing. Further statistics indicate that while some female owned SMEs are 100% financed by quasi-debt male owned SMEs maximum quasi-debt is only 75% of their capital structure.

Consistent with previous studies such as Coleman (2000), Treichel and Scott (2006) and Robb and Wolken, 2002) (2002), this study finds that South-Asian women owned SMEs are younger and smaller than male-owned SMEs. Moreover, Table 3 indicates that the

majority of SMEs in conflict affected areas are female owned. This may be that women are often the only survivors left to support their families when male relative are killed or injured in battle (Lemmon, 2012). Hence, it is no wonder female owned SMEs are highly prevalent in conflict areas. Overall statistics indicate approximately 70% of SMEs are from outside the capital city or city with population over 1 million in South Asian countries. This indicates the vital role of SMEs in rural economic development. Confirming prior research female SME owners are highly engaged in retail and other industry sectors compared to male owners. Statistics indicate male SME owners are dominant in the manufacturing sector.

Approximately 53% of total sample SMEs are sole proprietor, followed by 20% of listed non trade firms, seventeen percent as partnerships. Compared with female owned SMEs, male owned firms received government or other institutes start-up funds. This confirms there are gender differences in access to capital at the start- up. On the other hand female owned SMEs are highly home based and they are most likely to fund their business at start-up than men. Finally, judiciary system variables indicate that a high percentage of female SME owners consider their country judiciary system is moderate or unfair for them compared to male SME owners. This study SME sample represents 10% of Afghanistan SMEs, 26% of Bangladesh, 2% of Bhutan, 34% of Indian, 6% of Nepal, 13% of Pakistan and 9% of Sri Lankan SMEs.

Model

An ANOVA (using the F distribution) is used to investigate whether the external financing accessibility and external financing proportion variables are the same between firms with no female owners and firms with female owners. Typically, the one-way ANOVA is used to test for differences in more than two groups. When there are only two means to compare, the t-test and F-test are equivalent, the relation between ANOVA and t is given by $F= t^2$(*Analysis of variance*, 2013). Prior expectations are that neither of male group nor female group proxies have same variances. The testable hypothesis for ANOVA proposed is:

H_0= There is no difference in the external finance accessibility /proportion of female group and male group.

Table 4: ANOVA Results

Agency costs	F	P-value	F-critical
External financing accessibility	4.143	0.009	3.865
External financing proportion	4.653	0.040	3.865

Table 4 presents the ANOVA result for external finance accessibility. It can be seen that $F > F_{critical}$ and $p<\alpha$; therefore, this study rejects the null hypothesis, suggesting the two groups' means are different. This indicates firms with female owners and firms without female owners show significant difference in their external financing accessibility and external financing proportion. Therefore, further analysis is required to find out if there is any significant relationship between SME owner gender and external finance accessibility or external finance proportion in firm capital structure.

Initially, we will check our sample for the presence of outliers which may distort the predictive power of the regression results. Using Grubbs test[5] (maximum nor med residual test) to detect the presence of any outliers in our data set. In this study we check gender impacts on both financing accessibility and financing proportion. Hence, logit regression used to find the relationship between gender impacts on financing accessibility. The lower bound of financing proportion for each selected mode is zero and upper bound would be 100. Hence, following Beck et al., (2010) this study uses interval regression to find the relationship between gender impacts on financing proportion of each external financing source.

Logit regression

Access to external financing (each source separately) is measured on an ordinal scale, and hence logit model would be an appropriate econometric technique. This study proposes to clarify the dependent variable as dichotomous being either access to financing by each source or not. Further, this is creating a limited dependent variable dataset. In particular, this study considers the following form of logistic regression equation:

$$\text{Logit } [p(x)] = \log\left[\frac{p(x)}{1-p(x)}\right] = a + b_1X_1 + b_2X_2 + b_3X_3 \dots$$

[5] The test results generate new variables for each tested variable that takes on the value 1 if the observation is an outlier.

Whereas p can only range from 0 to 1, logit (p) scale ranges from negative infinity to positive infinity and is symmetrical around the logit of

$$P = \begin{cases} 1 & if \;\; y_i^* > 0 \\ 0 & otherwise \end{cases}$$

For ε_{it} independently logistic,

$$P = \frac{\exp(\alpha_i + \mathbf{x}_i'\boldsymbol{\beta})}{1 + \exp(\alpha_i + \mathbf{x}_i'\boldsymbol{\beta})}$$

p = the probability that a case is in a particular category,

exp = the base of natural logarithms,

α_i = the constant of the equation and,

$\mathbf{x}_i'$ = the coefficient of the predictor variables.

The linear regression model under interval censoring

In a linear regression model, T equals the sum of a linear combination of the covariate vector Z and a random error term,

$$T = Z'\theta + \varepsilon, \ldots\ldots\ldots\ldots\ldots(1)$$

where $\theta \in R^d$, and ε has an unspecified distribution function F with density *f*. Then the underlying model is

$$Q = \{Q_{\theta,F}: \theta \in R^d, F \; is \; a \; distribution \; function\}$$

is determined by the (1). There is tremendous amount of literature on the estimation of this model when (T,Z) is fully observable. In survival analysis, T is usually taken to be a log failure time, and the model is called the "accelerated failure time" model. Estimation of θ under right censoring has been considered by Buckley & James (1979), Ritov (1990), Tsiatis (1990), and Ying (1993), among many other authors. Under interval censoring, we only observe X defined in as X = (δ, Y, Z) .

RESULTS

Table 5: Determinants of external finance (female group)

This table reports relationship between firm characteristics and firm financial accessibility and their proportion. Logit regression reports "accessibility of finance". The purpose model for accessibility of finance:

$$Finacing\ dummy = \propto + \beta\ frim\ ownership + \gamma\ firm\ individual\ charaterisitcs + \delta\ country\ dummy + \mu,$$

Interval regression reports "proportion of finance by each source". The proposed model for proportion of finance:

$$Finacing\ proportion = \propto + \beta\ frim\ ownership + \gamma\ firm\ individual\ charaterisitcs + \delta\ country\ dummy + \mu,$$

	A_BANK	P_BANK	A_NONBANK	P_NONBANK	A_CREDIT	P_CREDIT	A_OTHER	P_OTHER
SMALL	-.48153* (.1180)	-3.560*** (1.081)	.2292* (.2132)	.7459 (1.399)	.4946*** (.1424)	3.081** (1.366)	.3295* (.1940)	4.342 (4.575)
MEDIUM								
CONFLICT	.2111 (.1343)	2.155* (1.191)	.2309 (.1900)	1.545 (1.353)	.0864 (.1516)	.6459 (1.336)	-.2993 (.2328)	.6515 (4.561)
CAPITAL	-.0679 (.1775)	-3.946** (1.642)	.7557** (.2918)	6.204*** (1.799)	.5684*** (.2170)	8.269*** (1.595)	-.2486 (.4164)	-14.96 (9.710)
Industry								
MANU	-.0581 (.1620)	-.4484** (1.543)	-.3265* (.1808)	-1.137 (1.7519)	.0549 (.1662)	-.2627 (1.521)	.1802 (.2685)	6.549 (5.712)
RETAIL	-.4221 (.3215)	7.329** (3.507)	-.0699 (.4960)	2.007 (4.059)	.5912** (.2905)	.1107 (.1706)	.3914* (.2205)	61.55 (3.021)
OTHER								
GOVERNMENT	-.0358 (.04280)	.1745 (.3948)	.1264* (.0734)	.6620 (.5256)	.0489 (.0488)	.5214 (4631)	.1075 (.0766)	5.058 (3.330)
Legal form of Business								
LISTED	4.574*** (.2935)	3.864 (11.47)	3.306*** (.3913)	2.199 (.7861)	3.485*** (.3113)	2.884 (1.111)	-5.645 (1.223)	5.767 (6.394)
NONTRADE	4.368*** (.2684)	3.880 (11.47)	3.582*** (.3103)	2.433 (.7861)	3.687*** (.2816)	3.142 (1.009)	-5.344 (.3499)	6.157 (4.122)
SOLE	4.226 (.2623)	3.852 (11.47)	3.789 (.2985)	2.583 (.7861)	3.689*** (3.689)	3.068 (2.263)	-5.555 (.3564)	5.613 (8.246)
PARTNERSHIP	4.349 (.2726)	3.892 (11.47)	3.327*** (.3264)	2.260 (.7861)	3.672*** (.2862)	3.067 (2.489)	-5.609 (.4113)	5.817 (6.601)
LIMITED	3.619 (.7718)	1.536 (11.47)	3.862*** (.5947)	-7.661 (8412)	4.799*** (.7294)	3.922 (2.586)	-4.961 (.3508)	-1.190 (6.340)
OTHER								
Ln(AGE)	-.0812 (.0776)	.2374 (.7148)	-.1991 (.1249)	-.7808 (.8934)	-.0650 (.0890)	-.3443 (.7964)	-.1958 (.1276)	-1.259 (2.745)
Judiciary system								
FAIR	.0621*** (.2377)	-.1652 (2.089)	.6350*** (.4041)	-4.987 (2.653)	.6631** (.2691)	6.722*** (2.244)	-.9512** (.4576)	-7.498 (6.284)
UNFAIR	-.1426**	-.4838**	-.2547*	-1.455**	.2456	1.960	.0469	-3.11

	(.1342)	(1.256)	(.2111)	(1.4517)	(.1762)	(1.641)	(.1967)	(4.929)
MODERATE				-				
SUPPORT	-.1447 (.2051)	-1.711 (1.762)	.4214 (.3569)	3.668 (2.327)	-.0589 (.2209)	-2.884* (1.702)	.7415* (.4280)	-1.168 (1.617)
EASE	.2892*** (.5068)	.6633*** (5.626)	.1010* (.5367)	.1130** (5.623)	-.746*** (.5231)	-.2179*** (4.399)	-.2030 (.7819)	-..0067 (3.116)
GDP	.1914*** (.4715)	.5310*** (4.112)	-.4923 (.9217)	.8673* (5.197)	-.7759 (.5261)	.1168** (5.113)	.2693** (.8677)	-8.270 (6.756)
INTEREST	.2276*** (.6964)	.2607*** (4.345)	.7748 (5930)	5.740 (8.700)	.7758 (..3237)	-9.595 (3.339)	.6209 (5664)	-1.332 (4.631)
Regression summary								
No'of observations	4389	4389	4389	4389	4389	4389	4389	4389
Log likelihood	-722.8	-2262.2	-209.8	-2262.2	-490.54	-997.8	-259.72	-163.4
sigma		10.1146		10.1146		8.9782		14.73
Pseudo R2	.9730		.9030		.9170		.633	

*Standard errors are in parenthesis. * denotes significant at 10% level, ** denotes significant at 5% level and *** denote significant at 1% level.*

Table 6: Determinants of external finance (using institutional factors)

This table reports relationship between firm characteristics and firm financial accessibility and their proportion. Logit regression reports "accessibility of finance". The purpose model for accessibility of finance:

$$Finacing\ dummy = \propto + \beta\ frim\ ownership + \gamma\ firm\ individual\ charaterisitcs + \delta\ country\ specific\ instituional\ factors + \mu,$$

Interval regression reports "proportion of finance by each source". The proposed model for proportion of finance:

$$Finacing\ proportion = \propto + \beta\ frim\ ownership + \gamma\ firm\ individual\ charaterisitcs + \delta\ country\ specifc\ instituional\ factors + \mu,$$

	A_BANK	P_BANK	A_NONBANK	P_NONBANK	A_CREDIT	P_CREDIT	A_OTHER	P_OTHER
SMALL	-.3490** (.1901)	.2905 (.4693)	.4007* (.4384)	-.2104 (.3086)	.8226*** (.2693)	1.774** (.6539)	.5108 (.6603)	4.250 (4.566)
FEMALE	-.2512** (.1698)	2.001*** (.4248)	-.4605*** (.4114)	.8564* (.3383)	-.4197* (.2354)	1.115** (.5642)	-.1914 (.5592)	-.7066 (3.822)
CONFLICT	.3110 (.2161)	.4545 (.5267)	.4127 (.4002)	-.1125 (.3166)	.1393 (.2705)	.5443 (.6905)	.3727 (.6844)	.7363 (4.566)
CAPITAL	-.8094 (.2521)	8.081*** (.6676)	.2082 (.4842)	2.343*** (.3765)	.3218 (.2780)	4.413*** (.7338)	-2.12 (1.522)	-15.24 (9.918)
Industry								
MANU	.1982 (.2064)	-.8588* (.5118)	-.6099 (.3928)	.3516 (.3082)	-.3201 (.2480)	-.3824 (.6314)	3.015*** (1.286)	1.6405** (7.829)
RETAIL	.0084 (.2568)	-1.340** (.6305)	-.5570 (.4979)	.2425 (.3883)	.2270 (.2972)	-1.541** (.7514)	2.517** (1.325)	1.234 (8.078)
OTHER		-		-				
GOVERNMENT	-.1910 (.0639)	1.425*** (.1499)	-.0159 (.1318)	.2880*** (.0926)	-.0804 (.0781)	.4226** (.1933)	1.132 (.7103)	-1.119 (1.6151)
Legal form of Business								
LISTED	12.22 (4.677)	-1.555 (.8132)	9.071* (5.541)	-3.501 (6.457)	10.35 (4.857)	-1.336 (5.097)	1.030 (1.080)	5.683 (.5565)
NONTRADE	11.91* (4.403)	-1.662 (8.336)	9.783* (8.891)	-4.557 (5.855)	10.81 (6.982)	-1.364 (7.325)	10.88 (2.955)	6.086 (.6553)
SOLE	11.62 (9.809)	-1.555 (8.132)	9.783 (8.850)	-4.339 (6.455)	10.69 (9.829)	-1.353 (7.319)	9.852 (8.295)	5.547 (.5538)
PARTNERSHIP	11.85 (8.414)	-1.647 (7.889)	10.01 (9.986)	-4.021 (8.599)	10.77 (7.206)	1.382 (7.320)	10.39 (9.926)	5.748 (.8399)
LIMITED	10.87 (8.101)	-1.384 (2.344)	9.1605 (7.677)	1.167 (6.669)	12.29 (.7271)	-1.382 (7.388)	10.80 (9.930)	-1.1469 (.3899)
OTHER								
LnAGE	-.0819 (.1279)	.2413* (.3095)	-.3909 (.2730)	.0625** (.2155)	-.0432 (.1578)	.0566 (.3924)	-.1911 (.4137)	-1.375 (2.730)
Judiciary system								
FAIR	-.2990** (.3846)	-.3384***	-.6777 (.7082)	-.2764 (.5372)	1.223*** (.4619)	.0900 (1.114)	-1.750 (.9274)	-7.599 (6.288)

		(1.006)						
UNFAIR	-.3228 (.2155)	.1410*** (.5258)	-.7269 (.4461)	.8497** (.3371)	.3233 (.3387)	-.2027 (.7599)	-.5035 (.7546)	-3.13 (4.927)
MODERATE	-	-						
SUPPORT	.0072 (.3306)	3.494*** (.8833)	.1942 (.5989)	.6478 (.4657)	-.2020 (.3490)	-1.978** (.8814)	1.132 (.7103)	3.9610 (4.815)
EASE	.0463*** (.0169)	.6791*** (.0408)	.0090 (.0299)	.6985 (.0406)	-.0105 (.0181)	-.2737*** (.0571)	-.1279*** (.0454)	-1.121*** (.3286)
GDP	-3.394 (.7399)	6.051*** (.2161)	-2.002 (.1382)	9.386*** (.1272)	-6.537 (8.557)	1.294*** (.2373)	7.384*** (2.722)	5.957*** (1.958)
INTEREST	-2.830 (7.795)	-3.158*** (.1987)	-3.598** (1.572)	-7.511*** (1.001)	-6.658 (9.9924)	-6.581*** (2.440)	-1.111 (.4324)	-8.748*** (3.071)
Regression summary								
No'of observations	4389	4389	4389	4389	4389	4389	4389	4389
Log likelihood	-734.3	-1732.8	-218.51	-215.2	-500.51	-791.32	-193.20	-163.54
sigma		4.188		1.422		4.117		14.745
Pseudo R2	0.8300		0.6263		0.732		0.205	

*Standard errors are in parenthesis. * denotes significant at 10% level, ** denotes significant at 5% level and *** denote significant at 1% level.*

Table 5 and Table 6 report relationship between gender (and firm ownership and firm characteristics) and firm financial accessibility and their proportion. Logit regression report "financial accessibility" and interval regression report "proportion of financing by each source". Table 5 indicates that female owned SMEs reporting greater financing obstacles when accessing external financing by bank and non-bank institutions. Furthermore, Table 5 reports that female owned SMEs bank (non-bank) financing accessibility is approximately 13%% (18%%) less than male counterparts. This may be due to female owned businesses being found to pay higher interest rates and higher collateral requirements than businesses owned by men (Coleman, 2000; Riding & Swift, 1990), they have less access to formal sources (bank and non-bank) of external financing. Apart from that women owned businesses were found to experience a higher incidence of unmet credit needs such as turned down on their most recent loan or did not apply for fear of being turned down (Cavalluzzo et al., 2002). Using US female owned small firms Treichel & Scott (2006) find similar results and indicate that after controlling for important business characteristics female owned SMEs are significantly less likely to apply for a bank loan. Further, lower access of external financing by female SME owners in South Asia may be consistent with Stevenson (1986) who noted that women have been denied access to capital

because they have traditionally and historically been confined to domestic roles. Further, due to cultural constraints women may face difficulties in acquiring required skill and knowledge (such as networking, experience, accounting skills etc.) necessary to confirm loan. Hence, they may not seek external financing as much as male owned SMEs do. Nevertheless, SME owners' gender is not a significant influential factor for trade credit accessibility and other modes of external financing (quasi-debt) accessibility. It may be that both male and female owned SMEs regardless of their owner's gender may depend on trade credit and quasi debt for their day to day working capital needs. Although owners' gender has significant impact on bank and non-bank financing in SMEs, results indicate that gender is not associated with external financing proportion by formal and informal financing sources used in this study, indicating that the loan size is not an effect of owners' gender and loan size is more related to other business environment factors. This is consistent with Haines, Orser, & Riding (1999) who reported that after controlling firm size, age and owner gender is not associated with loan size. This indicates that, although weak institutional environment create barriers to access external financing for female owned SMEs, once SME owner satisfies the external financing criteria, gender is not a significant factor in determining loan size.

The level of conflict affected in selected countries is different. Therefore, we use CONFLICT variable to capture the impact of conflict on the financing accessibility of firms. Although "conflict" variable does not show any significant relationship to external financing accessibility of SMEs the coefficient of the conflict affected variable is positively and 10% statistically significantly related with bank financing proportion variable. This may be due to the lack of an alternative source of finance availabilities in violence and conflict affected areas and SME owners should only depend on formal bank financing for their external financing requirements. In SME groups, the coefficient for the capital city variable is positively related to the non-bank and credit financing accessibility and proportion. However, results show that capital city variable is 10% significantly negatively related with bank finance proportion. This may be that SMEs from capital cities have more opportunity to access from other sources and they may not prefer to have a high proportion of bank financing in their capital structure. The coefficients of the manufacturing variable are negatively and are statistically significant at 5% and 10% level respectively to the bank financing proportion and non-bank financing accessibility; indicate that SMEs that belong to the manufacturing sector are reluctant to access

formal financing sources. A plausible reason could be that firms in the manufacturing sector face a high level bankruptcy risk; therefore manufacturing SMEs face high constraints to access formal sources of finance. However, manufacturing variable shows significantly positive relationship with accessibility of trade credits and quasi-debt. Further, results indicate that retail firm's show a high proportion of bank financing in their capital structure. This may be because retail firms have frequent cash flows and it helps them to access a high proportion of bank financing. Considering SME groups, government relationship (i.e. the percentage of total senior management time spent on dealing with requirements imposed by government regulations) variable shows 10% statistically significant and positive relationship with non-bank financing accessibility. Although this variable does not show significant relationship with other financing sources, this finding indicates that when South Asian SMEs follow government regulations and have high access to formal financing sources.

Next, results indicate that the legal forms of business play a significant role in external finance accessibility. Listed SMEs show significant positive access on bank financing, non-bank financing and trade credit while sole-proprietorship show significant positive relationship with trade credit. Partnership firms also show similar trends which indicate positive relationship with trade credit and non-bank financing accessibility. This result indicates when firms move from sole-proprietorship/partnership to listed firms they can have high access to both formal and informal financing. The coefficient of the variable LnAGE is positive and is statistically significantly at 10% level to the bank financing proportion indicating that mature firms have higher level of bank finance in their capital structure compared to the younger firms. Considering, mature firms financing options could be explained by the tax-benefit trade-off theory of financing (DeAngelo & Masulis, 1980). These firms generally have stable cash flows due to their high profitability and, therefore, these firms will seek to maintain an optimal capital structure by balancing the benefits and the costs of debt. In external financing perspective, our results support the view that firms that have been in operation for a long time have higher tendency to overcome information asymmetry issues through relationship building. Furthermore, good reputation gained through having a longer credit history also have potential to mitigate the adverse selection problems existing between mature firms and banks. As a result, mature firms are able to obtain loans on better terms and conditions compared to their younger counterparts. Our finding is consistent with that reported by Larry, Klapper, & Love (2010), that support the

view that younger firms are less reliant on bank financing compared to mature firms and as firms mature, they also move their financing preferences to bank financing from other informal sources of external funding.

Considering female SME groups, the coefficient of the variable FAIR is positive and is statistically significant with bank financing , non-bank financing and trade credit financing accessibility and it is further statistically significantly related with bank, non-bank and trade credit financing proportion. This indicates that when SME female owners feel their court system is fair, they tend to have more proportion of trade credit access and proportion in their capital structure. According to the World Bank, "rule of law is essential to economic development", hence when judiciary system is fair trade loan suppliers can trust female SME owners. However, results indicate that when the judiciary system is fair male SME owners have less access to other sources of informal finance. Interestingly, male SME owner group shows that when the judiciary system is unfair they have high access to external financing. This may be when judiciary system is unfair male owned SMEs may benefit from bribery to overcome bureaucratic constraints, inefficient public services, and rigid or bad laws.

Finally government support variable shows 10% statistically significantly negatively related with trade credit proportion of female owned SMEs. This may be when government supports funds to the female owned SMEs they do not need to seek trade credit financing by trade credit suppliers. However, coefficient indicates that when the government support increases by one unit, quasi debt access is increased by 74% of the finance accessibility. It is further confirmed by the positive relationship between government support variable and proportion of bank financing. However, government support variable shows any significant positive relationship with male group bank financing.

Considering institutional variable, EASE variable is significantly and positively related with bank financing accessibility variable and it is negatively related with "other" variable. This indicates that when the regulatory environment is more conducive to the start-up and operation of business, both male and female SME owners in South Asia have high access to formal financing and that avoids quasi-debt. However, results show that ease of doing business variable is significant negatively related with all sources of external financing modes used in this study. This indicates that, though regulatory environment is more conducive to access external financing, SMEs are reluctant to have debt in their capital structure. This may be because SMEs

exhibit pecking order behaviour with regards to their financing (Cassar and Holems, 2003; Ramlall, 2009 and Hewa-Wellalage & Locke, 2012). Further GDP indicates that when a country shows high GDP growth rate, SMEs allocated more external financing in their capital structure (GDP variable shows 1% statistically significant positive relationship with all four sources of external financing sources used in this study). This finding is contradictory to Beck et al., (2008) findings, they do not find a robust association of the level of economic development (measured by GDP per Capita) with financing patterns. Finally, this study reports that high real interest rate has significant negative impact on male group external financing proportion And contradictory results has shown by female SME group.

CONCLUSION AND IMPLEMENTATIONS

The discussion and analysis focuses on whether weak institutional and regulatory regimes in South Asia create additional barriers for female owned SMEs in accessing external finance. Findings are only partially consistent with previous research in the gender and external financing field; low access to formal external financing is identified as a constraint to female SME owners compared to male counterparts in the South Asia region as well. However, contrary to prior studies, this research indicates that once females have access to formal financing they use a higher proportion of formal financing (bank and non-bank debt) in their capital structure than their male-counterparts. Therefore, this study is timely as it signals to the South Asian countries to promulgate rules to strengthen institutional structures and regulatory regimes that will enhance the opportunities for growth and development of female owned SMEs.

This study may lead to several actions and policy related recommendations to enhance female SME owners' access to external financing. First, and foremost, is the potential to enhance access to financial services by creating and strengthening the laws. Further, female-owned firms, require establishment of a supportive environment for to strengthen female property rights, legal capacity to enter contracts in their own name, cultural constraints and barriers to networking etc. Nevertheless, steps along the path will likely require changing or upgrading constitutional provisions of non-gender discrimination of assets, property rights and property inheritance. An expanded financial infrastructure and increased availability of financial intermediates may ensure women owned enterprises have financial access. Specialized institutions e.g. credit information registries have evolved over the years which to some extent address the asymmetric information

problem existing in the female owned SMEs sector. These agencies now collect and distribute information which helps lenders to better assess the risks and accordingly lower the costs of processing loan applications. Further, to avoid the lack of traditional collateral held by female owners, introducing collateral registries and secure transaction systems is contributing to better allocations. Facilitating the use of movable collateral for borrowing is ensuring female owned SMEs because their assets are more likely to be movable. Enhanced financial institutions should better serve women entrepreneurs; ensuring female entrepreneurs have external financing accessibility. Local and foreign financial institutions, especially micro-finance institutions have a big role to play in female-entrepreneurs' access to external financing accessibility. There is potential merit in introducing more opportunities for female education, management and leadership training to enhance their skills and this will create an opportunity for female owned entrepreneurs to reduce bank-loan rejections and bankruptcies.

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