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DEMAND SIDE FACTORS AND ACCESS TO EXTERNAL FINANCE BY SMALL AND MEDIUM MANUFACTURING ENTERPRISES IN NAIROBI, KENYA

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Abstract

This study investigates how demand-side factors affect access to external finance by small and medium manufacturing enterprises (SMMEs) in Nairobi, Kenya. The demand-side factors considered in the study are firm characteristics, financial management practices and entrepreneur characteristics. The study employs an exploratory survey design utilizing quantitative methods in data collection and analysis. Data is analyzed using descriptive and inferential statistics. Logistic regression is used to test the relationship between demand-side factors and access to external finance because of the dichotomous nature of the dependent variable. The findings of the study show that some of the demand-side factors significantly influence access to external finance. These factors include entrepreneur's networks, ethnic orientation, firm growth and earnings volatility. The study recommends further probing of the role of good financial management practices such as preparation and usage of financial information on access to external finance in diverse settings and industries. It is also important for entrepreneurs and providers of the finances to establish and support sustainable networks that guarantee enterprise growth. Though ethnic orientation influence access to external finance, policy efforts should be put in place to ensure there is efficiency in the market for external financing and certain entrepreneurs are not disenfranchised on the basis of their ethnic background. As firm growth also influences access to finance, managers of the SMMEs should endeavor to attain steady and predictable earnings growth with minimal deviations. Such efforts would help minimize financial constraints caused when external funds are inaccessible.

Key Words: Demand side factors, Small and medium manufacturing enterprises

Introduction

The significance of Small and Medium-size Enterprises (SMEs) in economic development has been recognized worldwide. Abor (2008) and Floyd and McManus (2005) reinforce this recognition in the observation that most developing countries, have an absence of many large firms thus implying that the SME sector is the main engine of growth. In Kenya, Kithae, Gakure and Munyao (2012) explain that SMEs play a pivotal role towards the achievement of the broad goals outlined in vision 2030 and are critical drivers towards making Kenya an industrialized country with high quality of life for its citizen.

SMEs and entrepreneurship are widely recognized as being the key sources of dynamism, innovation and flexibility in the advanced industrialized economies, emerging markets and developing economies, and is major net job creators in these economies (OECD, 2006a; 2006b). The belief that better private sector performance in Africa can reduce poverty remains central in policy discussions. Bigsten and Soderbom (2006) observe that though the performance of Africa's manufacturing sector has generally been quite poor, many people still believe that manufacturing can act as an engine of growth in the continent, by creating skilled jobs and positive spillover effects and, more generally, by modernizing the economy.

In Kenya, under the economic pillar of vision 2030, manufacturing is one of the key sectors expected to deliver the envisaged 10 per cent economic growth rate per annum, by increasing and sustaining its contribution to Gross Domestic Product (GDP) by at least 10 percent per annum. The sector will also support the country's social development agenda through creation of jobs, generation of foreign exchange, and attracting local and foreign investment.

Inspite of the expected benefits and economic contributions, SMEs face enormous challenges. Some of the challenges identified by Bowen, Morara and Mureithi (2009) include; inadequate financing, marketing and sales promotion, high cost of production, human resource and IT support, and stiff competition from large and well-established

firms in the same industry. Wattanapruttipaisan (2003) reckon that SMEs are of great economic significance although their long term growth and competitiveness is compromised by chronic and often acute constraints on access to formal sector finance.

Lack of access to adequate financial services as a challenge facing SMEs is documented by various scholars including Atieno (2009), Bowen, *et al.* (2009), Nkurunziza (2005) and Bigstein, *et al.* (2003). Bowen, *et al.* (2009) underscore that lack of adequate financing is a major impediment to the growth and survival of SMEs in the manufacturing sector that are capital intensive. Atieno (2009) attributes this to a number of factors. Foremost, the nature of credit markets, which are segmented and incomplete. Secondly, on the supply side, most formal financial institutions consider SMEs uncreditworthy due to their lack of growth potential and small size of activities.

Literature indicates that there exists a financing gap between the demand for external finance by SMEs and its supply. According to Harvie (2010), the issue of access to finance by firms in general and existence of financing gaps are traced to the theories of imperfect information in capital markets. Financing gap occurs when specific categories of firms that should receive financing are systematically unable to acquire it, despite a willingness to pay higher interest rates, showing market failure especially if such lending opportunities are profitable. Sarapaivanich (2006) explain that financing gap can be as a result of demand-side factors or supply-side factors. The supply-side constraints look at whether suppliers of funds are willing to make funds available to SMEs on terms and conditions acceptable to them.

Demigurc – Kunt, Beck and Honohan (2008) refer to access to finance as the possibility that individuals or enterprises would make use of financial services, including credit, deposit, payment, insurance and other risk management services. Access to finance is distinguished from the actual use of financial services, because non-use of finance can be voluntary or involuntary. Voluntary non-users of financial services have access to but do not use financial services either because they have no need for those services or because they decided not to make use of such services due to cultural, religious or other reasons.

Becchetti and Trovato (2002) clarify that failure to access external finance by SMEs is attributed to various forces including; market failure, supply side factors and demand side factors. Market failure involves the general economy while supply side factors and demand side factors are specific to the providers and solicitors of external finance respectively. Beck (2007) indicates that both the supply side and demand side factors are important since they complement each other in most cases. The two sides should therefore be addressed concurrently for the efficient use of funds by the SMEs.

As indicated by Naruanard and Kotey (2011), several demand side factors have been identified in the literature by Bukvic and Bartlett (2003); Levy (1993) and Pissarides (1999) as affecting access to external finance. Ennew and Binks (1995) opine that access to finance is influenced by variables in both the enterprise's internal and external environment. SMEs are unable to access external finance because they are not investment ready. They lack the necessary information and knowledge of their businesses to approach finance providers or to be successful in accessing funds if they do.

Informed by the propositions of the imperfect information theory in capital markets by Stigiltz and Weiss (1981), this study explores the effect of various demand side factors on access to external finance by small and medium sized manufacturing enterprises in Kenya. Specifically, the study answers questions as: How do firm characteristics influence access to external finance by SMMEs in Nairobi, Kenya? How do financial management practices affect access to external finance by SMMEs in Nairobi, Kenya? What is the effect of entrepreneur characteristics on access to external finance by SMMEs in Nairobi, Kenya?

Theoretical Literature Review

A number of theories have been advanced in attempts to explain the capital structures of firms. These include the ***Modigliani-Miller (MM) irrelevance and relevance***, ***Trade off***, ***Market timing*** and ***Agency*** theories. However, none of the theories so advanced has succeeded in coming up with an optimal capital structure for a firm. The foregoing theories are not applicable in the case of SMEs for the reason that SMEs do not have the

option of issuing stocks or bonds which is a preserve for larger firms. According to Ang (1992) as cited in Sarapaivanich (2006), financial structures of SMEs and large businesses are dissimilar because of several unique characteristics of smaller businesses, such as lack of publicly traded securities and the high cost of financial markets. Binks, Ennew and Reed (1992) also observe that some firms cannot obtain funds through the banking system, because they have insufficient collateral, or they cannot provide information relevant to their project quality or their ability to return money. These arguments imply the existence of imperfections in the financial market that are incompatible with the assumptions of the M & M theory.

Pecking order theory (POT) developed by Myers (1984) and Myers and Majluf (1984) as an alternative explanation to why firms choose certain capital structure suits studies on SME capital structure decisions. Abor & Biekpe (2009), La Rocca, La Rocca & Cariola (2009) and Warma (2010) expound on the theory with the proposition that firms prefer to use internally generated funds, followed by the use of debt and finally equity. Thus, firms prefer to use internal sources of capital, relying on external sources only when the internal ones are exhausted. As a result, firms prefer to use less information-sensitive securities, with retained earnings being the most preferred financing source, followed by low-risk short-term debt and then higher-risk long-term debt and then equity capital.

Financial structure of a firm can also be explained using the life cycle of the firm. ***Life cycle theory*** suggests that a firm‘s access to finance depends on its stage of development. There is a natural life cycle of financing for private firms (Berger & Udell, 1998) and firms issue different securities at different stages of their life-cycles (Fluck, 2000). La Rocca, La Rocca and Cariola (2009) evaluated the role of the life-cycle and the differences in the determinants of the debt/equity ratio throughout the life cycles of Italian small businesses. The results of their study showed that in a bank-oriented country, firms tend to adopt specific financing strategies as they progress through the phases of their life cycle, and that a firm‘s financing strategy is influenced, among other factors, by asymmetric information considerations and the role of financial institutions.

Empirical Literature Review

Entrepreneurial Characteristics and Access to External Finance

Education Background: Some studies show a positive relationship between education background of an entrepreneur and the ability to access external finance. Dobbs and Hamilton (2007) observed that education enhances the communication abilities as well as exploratory skills. A firm with highly educated managers easily accesses external finance since they are equipped with managerial skills in financial management. Further, Kumar and Fransico (2005) established that education affects access to financial products. Highly educated managers have the required skills to manage functions of the enterprises such as sales and marketing, finance and human resources efficiently leading to high performance of an organization thus helping the firm to access external finance easily. However, there is opposing research by Han, Fraser and Storey (2008) asserting that entrepreneurs holding undergraduate degree are likely to be financially restrained compared to those equipped with formal education background because the highly educated entrepreneurs normally own and run relatively large business that are likely to be affected by financial constraints.

Entrepreneur's Experience: Pandula (2011) highlights the positive relationship that exists between past experience of an entrepreneur and improved accessibility of external finance. Bukvic and Barllet (2003) observe that inexperienced entrepreneurs put off financial providers. Pandula (2011) however establish that though there is a positive relationship between the accessibility of external finance and the entrepreneur's experience, there exists insignificant association between the years of experience and accessing external finance.

Networking: Curran *et al.* (1993) expounded that effective networks aid in providing information, advice as well as capital to small enterprises. Entrepreneurs use these networks to gain new ideas and in some occasion, one established member in the networks could introduce them to their loan officers or their bank managers. Levitt and March (1988) found that networking creates learning since it provides a platform by which entrepreneurs share knowledge and means for learning from the experienced firms

in the industry. Thus, SMEs managers can use networks effectively for learning purposes, obtaining and sharing information as well as gaining access to external finance.

Age of Entrepreneur: Coleman (2004) posits that age of an entrepreneur is a key determinant of the risk attitude thus affecting access to external finance. Unlike young managers who are risk takers, the old entrepreneurs are risk averse. Older entrepreneurs have already established their businesses and only require minimal finance to maintain as well expand their operations. Young entrepreneurs are in most cases venturing the market and have not yet reached their realization. Sarapaivanich (2006) asserts that young entrepreneurs are risk takers, thus may be prepared to undertake bigger opportunities in turn engaging in taking external finance, unlike older entrepreneurs who are less risk takers.

Family Business Generation: Evans and Bank (2008) cite the Coutts (2005) family business survey to explain that family business history largely influences the ability of a firm to access external finance. Although most family businesses do not appreciate external finance for fear of the risk of losing control and decision power, they still need external finance for their operations. Baskin (2001) points out that family owned businesses mainly get finance from bank loans and family funds. The profits of family firms are often reinvested and the owners are always willing to wait a return on capital invested.

Ethnic Background: Ram *et al*. (2002) highlight that some ethnic groups find it difficult to access external finance and mainly get them from community and family. Ram, Smallbone and Deakins (2002) highlight some distinctive characteristics of ethnic minority enterprises, which have higher potential and implied ability to access external finance. These characteristics include high concentration in low value-addition operations, relatively average size as well as engaging in low entry and threshold business activities such as clothing sector, hotels, and retailing. Ram, Mendor and Trevor (2008) opine that some entrepreneurs are motivationally ill equipped while others possess cultural attributes of entrepreneurialism. These attributes render them the ability of

starting their enterprises and readiness to take risk. Irwin and Scott (2010) observe that ethnic minority businesses have the greatest problem raising external finance.

Firm Characteristics and Access to External Finance

Firm Age: Diamond (1994) explains that a firm's age is perceived as a standard measure of its reputation in capital structure models. Over time, a firm establishes itself and therefore increases its capacity to access more debt. As it continues with its operations, it is perceived to more easily overcome problems associated with evaluation of creditworthiness, hence its ability to meet its obligations in a timely manner.

Firm Size: Some studies have outlined that firm size is a relevant determinant of capital structure. For example, Titman and Wessels (1988) and Wald (1999) have opined that small size is likely to worsen the information asymmetry between the SME owner - manager and potential capital lenders. As a result, the cost of debt may be higher for SMEs than for large firms. Ang, *et al*. (1982) argue that bankruptcy costs are relatively higher for small companies, because large firms show more stability and hold more diversified portfolios of activities. This situation supports a positive relationship between firm size and total and long-term debt on one side, and a negative relationship between firm size and short-term debt on the other. According to Osteryoung, *et al*. (1992), Chittenden *et al*. (1996), Michaelas, *et al*. (1999) and Hall *et al*. (2004) large firms usually choose long-term debt, while small companies prefer short - term debt. Lopez-Gracia and Aybar-Arias (2000) establish that size influences company self financing strategies.

Firm Profitability: Chittenden, et al. (1996), Jordan, et al. (1998), Michaelas, et al. (1999) and Mishra and McConaughy (1999) reason that SME profitability is negatively related to leverage. They argue that profitable firms tend to primarily use internal capital for their financing needs to avoid the costs of external debt. In other words, even if profitable firms can obtain easier access to leverage than less profitable organizations, they will prefer internal funds as the cost for external capital might be higher. This proposition is however contradictory to the conventional theory that the cost of debt is

usually lower than the cost of equity. One explanation is the risk associated with SMEs that makes debt capital costlier. However, within the pecking order arguments, internally generated resources would have first priority followed by debt issuance where equity is used as a last resort.

Firm Growth: Firm growth creates demand for investment funds. In this situation, internal funds and equity are often insufficient to sustain the growth process. Pecking order theory predicts that short-term debt represents the first financing option, followed by long-term leverage Cosh and Hughes (1994). Again, Michaelas, et al. (1999) found a positive relationship between growth, short and long-term leverage, while Jordan, et al. (1998) showed mixed results. Overall, high-growth firms will take on more debt than the less performing organizations Cassar and Holmes (2003), which suggests a positive relationship between growth and leverage. Considering pecking order arguments on short term vs. long-term debt, high growth will be more related to short-term than to long-term debt. Research on cross country differences in firm debt maturity by Demigurc-Kunt and Maksimovic (1999) found that firms in developing countries depend more on debt with shorter maturity as compared to firms in developed countries.

Asset Tangibility: Jensen and Meckling (1976) argue that shareholders of levered companies are inclined to overinvest, which intensifies the classical conflict of interests between stockholders and debt holders. If a firm has a high tangibility of assets (i.e. a high proportion of long term physical assets), leverage can be secured against these assets. However, in this situation the corporate manager would be restricted to using debt funds for specific projects. Thus, high tangibility of assets may increase the liquidation value of a firm and improves the guarantee of repayment, reducing the risk to debtors Harris and Raviv (1991). On the basis of this reasoning, the leverage capacity should increase with the proportion of tangible assets on the balance sheet. Trade-off theory predicts that leverage will be positively related to the proportion of tangible assets. Previous empirical findings confirm this positive relationship between tangibility and leverage (e.g. Fama and French (2002); Faulkender and Petersen (2006); Frank and Goyal (2003); Jimenez et al. (2006); MacKay and Phillips (2005); Rajan and Zingales

(1995); Shyam - Sunder and Myers (1999); Titman and Wessels (1988)). Moreover, a number of research studies on SME capital structure indicate a positive association of tangibility with total and long-term debt, and possibly a negative relation with short-term debt (e.g. Michaelas et al., (1999); Cassar and Holmes (2003)). Pandula (2011) explain that SMEs have fewer collateralisable assets than large firms. This may partly relate to the stage of growth the firm belongs to. In the earlier stages of the firm, it may have lower retained profits which may hinder them to purchase fixed assets compared to the larger firms which has a longer history. Another reason for small firms to have a smaller proportion of fixed assets is the capital constraints faced by them. Because of the need to raise large amounts of capital, it finds difficult for them to acquire a large number of fixed assets.

Volatility of Earnings: Volatility of earnings is considered as a determinant of leverage by both trade-off and pecking order theories. Trade-off theory suggests that a low volatility of earnings will decrease the indirect bankruptcy costs, permitting the firm to take on more debt Drobetz and Fix (2003). On the contrary, high volatility of earnings will increase the possibility of defaulting, inducing a negative relationship between volatility and leverage. Pecking order theory considers that high volatility of earnings worsens the information asymmetry problem since investors cannot predict the future earnings of the firm using the available information DeAngelo and Masulis (1980), which increases the cost of debt in comparison with other sources of finance. The anticipated relationship between volatility and leverage is also negative. The two theories predict that the volatility of earnings is inversely related to the capacity of the firm to obtain debt Drobetz and Fix (2003).

Legal form of the Firm: Cessar (2004) indicate that a firm's legal form influences its capital structure. Ownership structure and the type of the firm significantly influence access to external financing by SMEs. Incorporation is viewed by financial institutions as a sign of the firm's formality and creditability. Rob and Wolken (2002) advance the argument in line with ownership liability. Sole proprietors and general partners have unlimited liability against losses unlike shareholders of limited companies. As a result,

there exist agency costs between shareholders and creditors of corporations and limited companies than in sole proprietors and general partnerships. That makes limited companies more likely to finance projects with equity while sole proprietorship and partnerships can use debt financing more likely despite their limited access to it.

Financial Management Practices and Access to External Finance

Working Capital (Liquidity) Management: For liquidity and leverage, the trade off theory posits that a positive relationship exists between leverage and liquidity because higher liquidity ratio can support a relatively higher debt ratio due to greater ability of a firm to satisfy short-term contractual obligations on time. The pecking order theory has a contrary view where a belief of existence of a negative relationship between liquidity and leverage is held. This is explained that firms with enough liquidity may use internally available fund to finance investment. Empirical studies in support of this finding include Deesomsak et al. (2004), Mazur (2007) and Viviani (2008). Fatoki (2012) explain that management of working capital ensures that there is a sufficient cash flow for the firm to meet its short term debt obligations and operating expenses with the objective of balancing between profitability and liquidity.

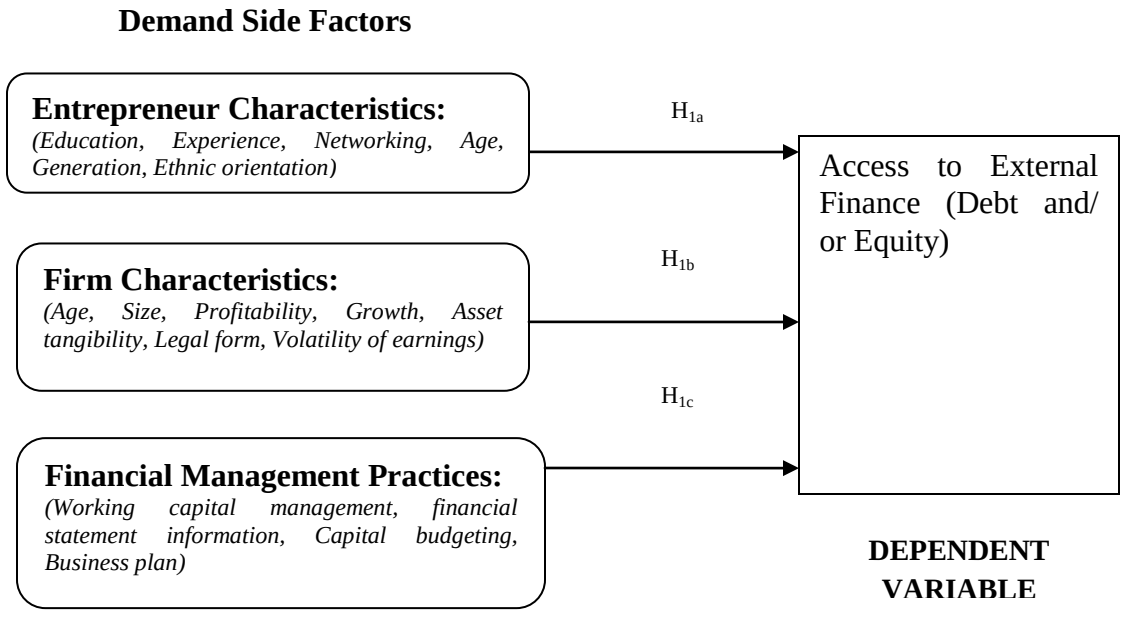
Financial Statement Information: Financial statement information is a useful tool for the SMEs in accessing finances. Cessar and Holmes (2003) observe that financial statement is required by SMEs when seeking external equity, to ascertain that investors have information on events that may have influence on investment decisions. Sarapaivanich and Kotey (2006) point out that new SMEs face greater constraints in accessing capital because they lack adequate financial information to enable outside investors to assess their performance.

Capital Budgeting: Fatoki (2012) explain that a large amount of money is required for investment in capital assets and outcome of capital budgeting decisions by SMEs continues to impact on the firm for many years. Olawale, Olumuyiwa and George (2010) deduced that the way to maximize a firm's value is to make good and unbiased estimates of the present value of the projects. There are various techniques used in capital

budgeting process including payback period, net present value, internal rate of return, accounting rate of return and profitability index.

Business Plan: UNCTAD (2005) document that business plan is an important element when applying for any funding to any source whether to a venture capital organization or any other investment or lending source. The absence of a persuasive business plan may lead to constraints in financing opportunities because all the financers requires a well prepared business plan to help in gauging the financial soundness of a business. Wattanapruttipaisan (2003) advise that SMEs must have better and more effective channels and modalities for communication with credit providers for funding purposes, including from venture capitalists and government program. A well-conceived business plan can serve as a blueprint and roadmap for entrepreneurs in the operation of their business activities and in the mobilization and allocation of the available resources.

From the foregoing literature, the study conceptualizes that the demand side factors classiffied as entrepreneur characteristics, firm characteristics and financial management practices directly influence access of external equity and debt capital for SMEs. The conceptualized relationship is expressed in the figure below.



The study thus hypothesizes that demand side factors influence access to external finance by SMEs with the following sub hypothesis:

H_{1a}: Entrepreneur characteristics significantly influence access to external finance by SMMEs in Nairobi, Kenya

H_{1b}: Firm characteristics significantly influence access to external finance by SMMEs in Nairobi, Kenya

H_{1c}: Financial management practices significantly influence access to external finance by SMMEs in Nairobi, Kenya

Methodology

The study is an exploratory survey using quantitative methodology in data collection and analysis. A list of thirty seven licensed Small and Medium Manufacturing Enterprises based in Babadogo, Nairobi County, Kenya was obtained from the Nairobi County offices. Babadogo is a formal manufacturing hub created as an alternative manufacturing zone to decongest the already established industrial area. The study uses primary data obtained from self administered semi structured questionnaires to 31 owner manager entrepreneurs of the manufacturing enterprises thereby attaining a response rate of 83.78%. Secondary data inform of audited financial statements of the enterprises was collected for a five year period to infer performance and liquidity management in the firms.

The semi structured questionnaire sought information on: Access to external finance, entrepreneur characteristics, firm characteristics and financial management practices. The study conceptualizes that access to external finance (ACC) is a function of demand side characteristics whose components are entrepreneur characteristics (EC), firm characteristics (FC) and financial management practices (FMP). Hence:

$$ACC = f(EC, FC, FMP) \quad \text{.....(i)}$$

The study uses Logistic regression models in analyzing the data for inferential statistics. Field (2009) explains that Logistic regression is a multiple regression with categorical

outcome variable and continuous or categorical predictor variables. Weltevreden and Boschma (2008) indicate that Logistic regression is used when the dependent variable is dichotomous. Logistic regression is therefore considered suitable for this study because of the binary/dichotomous nature of the dependent variable (access to external finance), which can have either of two outcomes; 1 (access) or 0 (no access).

The models for testing the proposed hypotheses are as:

$$ACC_i = \frac{e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon}}{1 + e^{\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon}} \quad \text{..... (ii)}$$

$$ACC_i = \frac{e^{\beta_0 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \varepsilon}}{1 + e^{\beta_0 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \varepsilon}} \quad \text{.....(iii)}$$

$$ACC_i = \frac{e^{\beta_0 + \beta_{15} X_{15} + \beta_{16} X_{16} + \beta_{17} X_{17} + \beta_{18} X_{18} + \varepsilon}}{1 + e^{\beta_0 + \beta_{15} X_{15} + \beta_{16} X_{16} + \beta_{17} X_{17} + \beta_{18} X_{18} + \varepsilon}} \quad \text{.....(iv)}$$

Table One: Operationalization of Study variables

Variable	Measurement
Dependent	
Access to External Finance (ACC)	Binary Responses – 0 for no Access to finance and 1 for Access to finance
Independent (Entrepreneur Characteristics)	
Education Background (X_1)	Highest level of entrepreneurs education
Entrepreneurs Experience (X_2)	Cumulative number of years of business experience
Networking (X_3)	Entrepreneurs personal relationships with external actors
Entrepreneurs Age (X_4)	Age of entrepreneur
Entrepreneurs Generation (X_5)	Generation currently managing enterprise
Entrepreneurs Ethnicity (X_6)	Ethnic orientation of entrepreneur
Gender (X_7)	Gender of the entrepreneur
Independent (Firm Characteristics)	
Firm Age (X_8)	Number of years in business
Firm Size (X_9)	Number of employees
Firm Profitability (X_{10})	Average return on assets (ROA) over past five years
Firm Growth (X_{11})	Average sales growth over past five years
Asset Tangibility (X_{12})	Average Fixed asset structure ratio = Tangible net fixed assets/ Total assets
Volatility of Earnings (X_{13})	Average standard deviation of net income after tax and donations
Legal Form of Business (X_{14})	Legal ownership status of the firm
Independent (Financial Management Practices)	
Liquidity (X_{15})	Average current ratio of the enterprise = Current Assets/ Current Liabilities
Financial statement information (X_{16})	Preparation of Financial statements by enterprise
Capital Budgeting(X_{17})	Application of capital budgeting techniques for investment decisions
Business Planning(X_{18})	Preparation of Business Plan by enterprise

Results and Discussion

Model (ii) above is a logistic regression model for predicting accessibility of external finance for entrepreneurs of the SMMEs using entrepreneur characteristics as the predictors. As indicated in appendix one, introduction of networking of the entrepreneur into the model improves the prediction ability of the model on access to finance from 67.7 percent to 74.2 percent. Further, introduction of ethnic orientation improves the prediction ability of the model from 74.2 percent to 90.3 percent.

A test of the full model including networking of the entrepreneur, against a constant only model was statistically significant χ^2 (df = 1, N = 31) = 8.275, p<0.05. The model was able to correctly classify 90.5 percent of entrepreneurs who got access to external finance and 40 percent of entrepreneurs who did not get access to external finance, for an overall success rate of 74.2 percent. Nagelkerke's R^2 of 0.327 indicated a fairly moderate relationship between prediction and the grouping of the enterprises.

A test of the full model including networking and ethnic orientation of the entrepreneur, against a constant only model was statistically significant χ^2 (df = 2, N = 31) = 15.762, p<0.05. The model was able to correctly classify 85.7 percent of entrepreneurs who got access to external finance and 100 percent of entrepreneurs who did not get access to external finance, for an overall success rate of 90.3 percent. Nagelkerke's R^2 of 0.557 indicated a fairly moderate relationship between prediction and the grouping of the enterprises. Table two below presents the logistic regression coefficient, Wald test and Odds ratio/ Exp (B) for the two predictors (networking and ethnic orientation) while employing 0.05 criterion of statistical significance.

Table Two: Logistic Regression Coefficients on Entrepreneur Characteristics and Access to External Finance

Variable	Coefficients			
	Model One		Model Two	
	B	Odds ratio	B	Odds ratio
Networking	-1.490	.225	-1.994	.136
Ethnic Orientation	-	-	-21.927	.000
Constant	3.858	47.361	27.919	1.334E12
-2 Log likelihood	30.710		23.224	
Nagelkerke R Square	0.399		0.557	

Model one in table two above indicates that 39.9 percent variations in access to external finance are explained by variations in entrepreneur networks. The odds ratio of 0.225 indicate that an entrepreneur with networks was 0.225 times more likely to access external finance than entrepreneurs without networks having allowed for the other entrepreneur's characteristics.

Model two in the table two above indicates that 55.7 percent variations in access to external finance are explained by variations in entrepreneur networks and ethnic orientations. The odds ratio of 0.136 indicate that an entrepreneur with networks was 0.136 times more likely to access external finance than entrepreneurs without networks having allowed for the other entrepreneur's characteristics especially ethnic orientations. Adding the ethnic orientation statistic in model two reduced the 2 log likelihood by 7.486 thereby improving the prediction ability of the second model.

The finding that two attributes of entrepreneur characteristics (Networking and ethnic orientation) are statistically significant in explaining access to finance directs the study to fail to reject the hypothesis that entrepreneur characteristics significantly influence access to external finance by SMMEs in Nairobi, Kenya.

Model (iii) above is a logistic regression model for predicting accessibility of external finance for entrepreneurs of the SMMEs using firm characteristics as the predictors. As presented in appendix two, introduction of firm growth into the model improves the prediction ability of the model on access to finance from 67.7 percent to 74.2 percent. Further, introduction of earnings volatility improves the prediction ability of the model from 74.2 percent to 77.4 percent.

A test of the full model including earnings volatility, against a constant only model was statistically significant χ^2 (df = 1, N = 31) = 8.275, $p<0.05$. The model was able to correctly classify 90.5 percent of enterprises who got access to external finance and 40 percent of enterprises who did not get access to external finance, for an overall success rate of 74.2 percent. Nagelkerke's R^2 of 0.327 indicated a fairly moderate relationship between prediction and the grouping of the enterprises.

A further test of the full model including firm growth and earnings volatility, against a constant only model was statistically significant χ^2 (df = 2, N = 31) = 12.326, $p<0.05$. The model was able to correctly classify 81 percent of enterprises who got access to external finance and 70 percent of enterprises who did not get access to external finance, for an

overall success rate of 77.4 percent. Nagelkerke's R^2 of 0.458 indicated a fairly moderate relationship between prediction and the grouping of the enterprises. Table three below presents the logistic regression coefficient, Wald test and Odds ratio/ Exp (B) for the two predictors (earnings volatility and firm growth) while employing 0.05 criterion of statistical significance.

Table Three: Logistic Regression Coefficients on Firm Characteristics and Access to External Finance

Variable	Coefficients			
	Model One		Model Two	
	B	Odds ratio	B	Odds ratio
Earnings Volatility	-1.490	.225	-1.715	0.180
Firm Growth	-	-	-0.637	0.529
Constant	3.858	47.361	6.742	847.614
-2 Log likelihood	30.710		0.327	
Nagelkerke R Square	26.660		0.458	

Model one in table three above indicates that 26.66 percent variations in access to external finance are explained by variations in earnings volatility. Model two in the table three above indicates that 45.8 percent variations in access to external finance are explained by variations in earnings volatility and firm growth.

Since two attributes of firm characteristics (firm growth and earnings volatility) are statistically significant in explaining access to finance, the study to fail to reject the hypothesis that firm characteristics significantly influence access to external finance by SMMEs in Nairobi, Kenya.

Model (iv) above is a logistic regression model for predicting accessibility of external finance for entrepreneurs of the SMMEs using financial management practices as the predictors. From the logistic regression analysis provided in appendix three, the study establishes that none of the identified practices is suitable in distinguishing the enterprises amongst those that access finance and those that do not. In light of this finding, the study rejects the proposition that financial management practices significantly influence access to external finance by SMMEs in Nairobi, Kenya.

Conclusions and Recommendations

The influence of demand side factors on access to external finance by SMMEs motivates this study. The identified demand side factors from literature are classified as entrepreneur characteristics, firm characteristics and financial management practices.

On the first category of demand side factors (entrepreneur characteristics), the study finds that networking and ethnic orientation are significant in explaining variations in access to external finance by the SMMEs. The finding that variations in entrepreneur network may explain up to 39.9 percent variations in access to finance confirms postulations by Curran *et al.* (1993) that effective networks assist in providing information, advice as well as capital to small enterprises. It also confirms Levitt and March (1988) proposition that networking provides a platform by which entrepreneurs share knowledge and means for learning from the experienced firms in the industry. Introduction of ethnic background as entrepreneur characteristic in the study confirms that up to 55.7 percent variations in access to external finance by the SMMEs are explained by variations in both networking and ethnic background. This finding reinforces the propositions by Ram *et al*. (2002), Ram, Mendor and Trevor (2008) and Irwin and Scott (2010) that some ethnic groups find it difficult to access external finance. Ram, Smallbone and Deakins (2002) also explain that some distinctive characteristics of ethnic minority enterprises have higher potential and implied ability to access external finance. Informed by these findings, the study confirms that entrepreneur characteristics significantly influence access to finance by the SMMEs.

On the second category of demand side factors (firm characteristics), the study establishes that firm growth and volatility of earnings are significant in explaining access to external finance by the SMMEs. The finding that 26.66 percent variations in access to external finance are explained by variations in earnings volatility confirms the literature by Drobetz and Fix (2003). The negative relationship confirms that volatility of earnings is inversely related to the capacity of the firm to obtain debt. From the findings, it is inferred that 45.8 percent variations in access to external finance are explained by variations in earnings volatility and firm growth. This finding confirms the arguments by

Cosh and Hughes (1994), Michaelas, et al. (1999), Jordan, et al. (1998) and Cassar and Holmes (2003) that firm growth creates demand for investment funds and internal funds and equity are not sufficient to sustain the growth process. These study findings confirm the proposition that firm characteristics significantly influence access to finance by the SMMEs.

Given that entrepreneur characteristics, notably networking influences access to external finance, the suppliers of funds and the entrepreneurs themselves should endeavor to develop and support sustainable networks for the growth of the enterprises. Though ethnic background seem to have a play in access to external finance, policy efforts should be put in place to ensure there is efficiency in the market for external financing and ethnically minor entrepreneurs are not disenfranchised on this basis. As firm growth also influences the access to finance, managers of the SMMEs should ensure they attain steady earnings growth with minimal deviations to avoid financial constraints for firm operations. The study fails to confirm the proposition that the third category of demand side factors (financial management practices) significantly influence access to finance by the SMMEs. The study however identifies a necessity for further investigations on the role of the cited financial management practices on access to external finance in different industries and other regional settings.

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Appendix One: Access to Finance and Entrepreneur Characteristics

Classification Table[a,b]

Observed			Predicted		
			Acess to external Finance		Percentage Correct
			Yes	No	
Step 0	Acess to external Finance	Yes	21	0	100.0
		No	10	0	.0
	Overall Percentage				67.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.742	.384	3.729	1	.053	.476

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	8.275	1	.004
	Block	8.275	1	.004
	Model	8.275	1	.004
Step 2	Step	7.486	1	.006
	Block	15.762	2	.000
	Model	15.762	2	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	30.710[a]	.234	.327
2	23.224[b]	.399	.557

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

b. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Classification Table[a]

Observed			Predicted		
			Acess to external Finance		Percentage Correct
			Yes	No	
Step 1	Acess to external Finance	Yes	19	2	90.5
		No	6	4	40.0
	Overall Percentage				74.2
Step 2	Acess to external Finance	Yes	18	3	85.7
		No	0	10	100.0
	Overall Percentage				90.3

a. The cut value is .500

Variables in the Equation[c]

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	networking	-1.490	.618	5.814	1	.016	.225
	Constant	3.858	1.909	4.083	1	.043	47.361
Step 2[b]	networking	-1.994	.781	6.520	1	.011	.136
	Ethnicorientation	-21.927	1.705E4	.000	1	.999	.000
	Constant	27.919	1.705E4	.000	1	.999	1.334E12

a. Variable(s) entered on step 1: networking.

b. Variable(s) entered on step 2: Ethnicorientation.

c. Stepwise procedure stopped because removing the least significant variable result in a previously fitted model.

Appendix Two: Access to Finance and Firm Characteristics

Classification Table[a,b]

Observed			Predicted		
			Access to Finance		Percentage Correct
			yes	no	
Step 0	Access to Finance	yes	21	0	100.0
		no	10	0	.0
	Overall Percentage				67.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.742	.384	3.729	1	.053	.476

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	8.275	1	.004
	Block	8.275	1	.004
	Model	8.275	1	.004
Step 2	Step	4.051	1	.044
	Block	12.326	2	.002
	Model	12.326	2	.002

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	30.710[a]	.234	.327
2	26.660[a]	.328	.458

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Classification Table[a]

Observed			Predicted		
			Access to Finance		Percentage Correct
			yes	no	
Step 1	Access to Finance	yes	19	2	90.5
		no	6	4	40.0
	Overall Percentage				74.2
Step 2	Access to Finance	yes	17	4	81.0
		no	3	7	70.0
	Overall Percentage				77.4

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1[a]	EarningsVolatility	-1.490	.618	5.814	1	.016	.225
	Constant	3.858	1.909	4.083	1	.043	47.361
Step 2[b]	Firmgrowth	-.637	.338	3.550	1	.060	.529
	EarningsVolatility	-1.715	.669	6.570	1	.010	.180
	Constant	6.742	2.620	6.625	1	.010	847.614

a. Variable(s) entered on step 1: EarningsVolatility.

b. Variable(s) entered on step 2: Firmgrowth.

Appendix Three: Access to Finance and Financial Management Practices

Classification Table[a,b]

Observed			Predicted		
			Access to external finance		Percentage Correct
			yes	no	
Step 0	Access to external finance	yes	21	0	100.0
		no	10	0	.0
	Overall Percentage				67.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.742	.384	3.729	1	.053	.476

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Wcmgt	3.433	1	.064
		Fsiinfo	.179	1	.672
		Capitalbdgtg	1.001	1	.317
		Businessplan	.818	1	.366
	Overall Statistics		5.492	4	.240