



## **SMALL MEDIUM ENTERPRISE (SME) BANK FINANCING CONSTRAINTS IN DEVELOPING COUNTRIES: A CASE STUDY OF BHUTAN**

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The paper investigates the cause and nature of the SME financing constraints in terms of accessibility to loans from the banks in Bhutan based on economic theories of pecking order of hierarchy, information asymmetry and agency theory. The quantitative research methodology was based on primary data collected through a field survey of SME owners in Bhutan and analyzed using statistical software Stata/IC 13. Five key hypotheses were tested through multiple linear regression model. The empirical results showed that accessibility to bank loan was determined by firm characteristics (size and age); owner characteristics (age and educational qualification); financial information; loan characteristics (interest rate, loan term) and loan repayment capacity (collateral and owner's equity). However, the industrial sector of a firm and the gender of SME owner were not statistically significant in determining SMEs' accessibility to bank loans. The outcome of the paper has direct and policy implications on the SMEs and the government.

**Keywords:** SMEs, Bank loan, Bhutan, Information asymmetry, Policy implications.

### **Introduction: Background on Bhutan**

Small Medium Enterprises (SMEs) plays a crucial role in the socio-economic development of a country through employment generation, equitable regional development and poverty alleviation (Holmes, Hutchinson, Forsaith, Gobson, & McMahon, 2003). However, SMEs are faced with pertinent challenge of inaccessibility to the finance hampering its development and growth. Bank is the main source of external financing for SMEs, to initially to start a business and later for its growth and expansion, particularly in the developing countries like Bhutan. (Beck, Demirgüç-Kunt, & Singer, 2013; Holmes, et al., 2003). Despite its small beginnings, SMEs are also seen as the foundation of future generation companies owing to its potential to grow. Prior studies have stated that SMEs face severe financial constraints in comparison to the larger firms because SMEs are considered risky investment by the lenders (Berger & Udell, 2006; Holmes, et al., 2003). These studies reported that the lack of finance in the initial stage of SME growth resulted in failure of the business and developmental stagnation in the later stage. SMEs' inaccessibility to external financing has been attributed mainly to high information asymmetry between the lenders and the SMEs which makes SME loan a risky investment (Brent & Addo, 2012; Deakins & Hussain, 1994). This difficulty transcends to both availability of finance and the terms and conditions under which SMEs obtain the finance from the lenders (Oncioiu, 2012; St-Pierre & Bahri, 2011). Most of the literature on SME financing constraints is based in developed economies questioning its applicability

to the developing countries. Therefore, to understand the financing inaccessibility issue from the perspective of SMEs in a developing country, Bhutan has been chosen as a case study.

The Kingdom of Bhutan is located in the eastern Himalayas and landlocked between China and India with total area of 38,394 square kilometers with population of 750,000 (NSB RGOB, 2013). World Bank (2015) categorized Bhutan under “Lower middle income” based on the Gross Domestic Product (GDP) of \$1.821 billion Gross National Income (GNI) per capita of \$ 2390 in 2014. Bhutan’s small economy is largely driven by the hydropower sector and tourism sector but highly dependent on international aid and heavily reliant on imports for both consumption and capital goods needs (NSB RGOB, 2013). The Bhutanese economy is dominated by SMEs inclusive of micro enterprises and self-operated and family owned firms representing a developing economy. The SMEs in Bhutan are defined and classified based on the size of the initial cost of investment of the firm and number of employees (RGoB, 2012).

**Table . Firm Classification in Bhutan**

Firm Size	Employment Size	Investment Size
Large	100+	> Nu. 100 million
Medium	20 - 99	Nu. 10 - 100 million
Small	5 - 19	Nu. 1 - 10 million
Cottage	1 - 4	< Nu. 1 million

*Source: Ministry of Economic Affairs, RGoB, 2012*

The Royal Government of Bhutan (RGoB) has recognized the private sector as the engine of economic growth of the country and thus SMEs, which makes up majority share of the private sector, plays a central role in the Bhutanese economy (Chetri & Dhar, 2004; NSB RGOB, 2013). However, the private sector performance has been modest in comparison to the importance placed on its potential by the government (RGoB & ADB, 2012b). The Bhutanese SME sector is faced with constraints such as small financial sector; inadequate infrastructure; inaccessibility to market information and absence of SME oriented policies. Most of the SMEs in Bhutan start on a small scale and remain small throughout due to lack of finance to grow (RGoB & ADB, 2012b; World Bank, 2013). Based on the enterprise survey conducted in 2011 (RGoB, 2012), inaccessibility to financing was rated highest by the firms in comparison to other obstacles faced by the SME sector. Likewise, World Bank ranked Bhutan 141 out of 189 countries on the ‘Ease of doing business’ (SMEs) and 109 out of 189 in the area of getting credit to do a business (World Bank, 2013). Unlike developed economies, where the financial market is matured and marked by several hundreds of small and locally operating banks, in developing low income countries such as Bhutan, the financial market in its nascent stage is represented by small and concentrated banking systems (Rahut, Velásquez Castellanos, & Sahoo, 2012). The formal banking system in Bhutan is small and young and mostly involved in stable and large commercial transactions (Chetri & Dhar, 2004; Moktan, 2007; RGoB & ADB, 2012a). Therefore, the problem of SMEs’ inaccessibility to financing is more conspicuous in developing countries like Bhutan with an underdeveloped financial system. The Bhutanese banking sector is biased towards SME sector and dominantly caters to the larger firms due to high risk and administrative costs involved in SME financing

The paper examines how factors related to firm characteristics, owner characteristics and financial information and loan characteristics determine the SMEs’ accessibility to the bank loans in Bhutan through multiple linear regression (MLR) model and hypotheses testing. The paper is expected to have a direct implication on SMEs and significant policy implications for the government and concerned agencies to address the SMEs’ inaccessibility to bank loans.

## Literature Review

Based on the existing literature, three prominent economic theories - Pecking Order of Hierarchy (Myers, 1984);, Information Asymmetry Theory (Stiglitz & Weiss, 1981) and Agency Theory (Jensen & Meckling, 1976) were identified to investigate SMEs' accessibility to the bank loans in Bhutan. These theories form the foundation to the development of the research model and hypotheses. The Pecking Order of Hierarchy (PoH) defines a firm's preference of financing from different sources ultimately outlining the firm's capital structure (Myers, 1984). The POH model predicts SMEs' capital structure in terms of ratio of owners' equity and external debt (Paul, Whittam, & Wyper, 2007). PoH is seen prominently in SMEs wherein SMEs prefer to use internally generated funds (personal savings, funds from family and friends, retained earnings) over the external finance, bank loans in case of the study (Berger & Udell, 2006; Degryse, de Goeij, & Kappert, 2012). Authors like Ang (1991, 1992) and Paul, et al. (2007) stated that the SME's preferential funding was sought due to limited funding options available to SMEs in comparison to larger firms and also to minimize intrusion into the business. Likewise, Hall, Hutchinson, and Michaelas (2004) also attributed SMEs preference to use internal funds before seeking funds from external sources to the difficulties in accessing external funds due to its high information opacity. Hence, the SMEs adjust the distortions cause by asymmetric information through funding preference eventually defining its capital structure.

The theory of information asymmetry is mainly caused by SMEs' poor financial management caused by its obscure bookkeeping records, low levels of credit accountability and lack of financing knowledge (Beck, Demirgüç-Kunt, & Pería, 2008). Likewise, Berger and Udell (2006) also supported SMEs' lack credit history and obscure financial records increasing its informational opacity from the lender's perspective. SMEs' information asymmetry is amplified by the fact that they are not listed companies and their financial reporting is not regulated and mandated by the security exchange bodies (Allee & Yohn, 2009; Takagi, 2002). Hence, there is high propensity for SMEs to disclose less information making less efficient in minimizing the information asymmetry with the banks. The non-disclosure of information, lack of accounting records and financial statements has rendered SMEs as high risk borrowers in the eyes of the banks enhancing their inaccessibility to bank loans (Berger, Frame, & Miller, 2005). Further, Drever, Stanton, and McGowan (2007) stated that even when SMEs maintained financial reports, it was mainly produced for the use of owner/manager for tax reporting etc. and not to be shared in the financial market. Therefore, in absence of proper business plans, financial forecasting and growth roadmap, SMEs are categorized as a high-risk investment by the banks. Deakins and Hussain (1994) and Rao (2003) advocated that risk associated with SMEs information asymmetry increases the cost of financial distress of the firm. Therefore, production and usage of financial statements by the SMEs was found to reduce the information asymmetry easing their accessibility to the bank loans (Binks, Ennew, & Reed, 1992). Similarly, Allee and Yohn (2009) reported that SMEs using accrual-based financial statements enjoyed more benefits in terms of greater access to the external credit and lower cost of credit.

The agency theory's conventional principal-agent (Jensen & Meckling, 1976) conflict of interest in regards to financial operation is represented in a loan contract between a bank and a SME where the bank plays the role of principal while the SME of an agent (Holmes, et al., 2003; Takagi, 2002). The conflict of interest between the bank and SME is caused due to borrowers' (SMEs) privy to business information while the lender (bank) is deprived of the same information (Brent & Addo, 2012; Caneghem & Campenhout, 2012). Therefore, the cost of SMEs' hidden information is felt by the banks, inducing the banks to resorts to adverse selection and credit rationing to overcome the risk of imperfect information (Berger & Udell, 2006; Gregory, Rutherford, Oswald, & Gardiner, 2005). In adverse selection, the banks make a conscious and calculated decision to omit some of the SME borrowers from participating in the loan availing process (Hyytinen & Väänänen, 2006) to minimize risk exposure. Similarly, in SME credit rationing (Jaffee & Russell, 1976; Stiglitz & Weiss, 1981), the lenders imposes credit limits with smaller loan amounts than required by SMEs either at same or higher interest rates increasing the loan transaction cost for SMEs (Levenson & Willard, 2000). The principal-agency conflict is further extended to the issue of moral hazard where SME owners invests in riskier projects once the loan transaction has been

successful, while concealing such behavior from the lenders (Deakins & Hussain, 1994; Dietsch & Petey, 2002; St-Pierre & Bahri, 2011). Hence, the moral hazard is associated with the hidden action on the part of borrowers which the lenders can foresee an ex-ante risk but still cannot predict the actions of the borrowers (Drever, et al., 2007; Uesugi & Ono, 2009). Therefore, the banks levy strict terms and conditions of borrowing on SMEs like high interest rate, collateral, short term loan etc. to override the risk associated with information asymmetry and moral hazard (Bhaird & Lucey, 2010; Hyytinen & Väänänen, 2006). It then results in SMEs being under-capitalized with mismatched loans from the banks not suiting their needs impeding its productivity, expansion and growth.

The literature identified specific attributes of SMEs, broadly divided into physical and financial characteristics of the firm and the entrepreneur (owner) and the loan characteristics, that determined a firm's accessibility to the external financing, bank loans in case of the study (Bhaird & Lucey, 2010; Cassar & Holmes, 2003; Degryse, et al., 2012). The physical characteristics size and age of the firm is directly proportional to the accessibility to debt finance with smaller and younger firms being more dependent on internally generated finance (Irwin & Scott, 2010; Paul, et al., 2007). Cassar (2004) stated that larger firms are associated with more real assets and diversified operations that serve as a proxy to firm stability and insolvency, making it easier to access external financing. Therefore, larger firms are more likely to use external and long terms debt over internal funds in comparison to smaller firms who face difficulty in accessing external financing owing to its severe information opacity (Bhaird & Lucey, 2010; Holmes, et al., 2003). It is therefore, relatively costlier for younger and smaller firms to resolve the issue of information asymmetry adversely affecting their accessibility to bank loans. Gregory, et al. (2005) also indicated that the issue of informational asymmetry was more severe in the lower spectrum of SMEs making them the most credit-constrained. Similarly, the firm sector or industry in which it is operating was found to influence its debt accessibility based on the degree of competition, risk and profitability of the industry (Degryse, et al., 2012; Hall, Hutchinson, & Michaelas, 2000). Storey and Wynarczyk (1996) also reported variance in debt ratio of firms across the industries based on firm asset type, risk and fund requirement and growth potential. Hence, capital intensive industry firms were able to access traditional source of finance (banks) easily due to advantage of their fixed assets acting as collateral (Johnsen & McMahon, 2005; Neeley & Auker, 2009). The literature evidenced that the information asymmetry was negatively correlated to firm characteristics where smaller and younger firms are information opaque in comparison to larger and older firms. Therefore, the smaller and younger firms are subjected to the problem of adverse selection and credit rationing by the banks thereby limiting their accessibility to the loans.

Since the SME owner is also the manager of the firm, the influence of the owner on the firm's accessibility to external finance and its capital structure is very important. Therefore traits of the owners such as age, educational qualification, managerial experience and personal assets owned are associated with risk taking caliber and control which in turn influences firm's accessibility to financing (Cassar & Holmes, 2003; Coleman, 2000; Neeley & Auker, 2009). According to Han, Fraser, and Storey (2009) owner's age and education level were positively related to the accessibility to debt capital as these traits created higher value for the firm. Similarly, technical and managerial skills of SME owner-manager were also related to their ability to gain access to finance for SME growth (Bruder, Neuberger, & Rätthke-Döppner, 2011). Therefore, higher education of owner and age of the owner were associated with higher credibility and increased the chances of obtaining debts from the banks. The gender of the owner was also found to have strong influence on the SME's accessibility to bank loans with female owners facing more difficulty in accessing external financing (Carter, Shaw, Lam, & Wilson, 2007; Coleman, 2000). Likewise, Storey (2004) and McKechnie, Ennew, and Read (1998) reinforced that female owners more credit constrained in comparison to their male counterparts. Therefore, the characteristic of owner defined by age, gender, and educational qualification serve as a proxy to firm risk taking and performance caliber from the perspective of bankers, determining its accessibility to bank loans.

From the literature review, three main loan characteristics loan amount; loan interest rate and loan term were identified as factors that determined the loan accessibility of SMEs (Beck, et al., 2008; Holmes, et al., 2003). Ang (1991, 1992) stated that the financial institutions face the economies of scale

disadvantage in lending to small loan size owing to its small sized investment. The transaction cost for SME loans are costlier than larger firm loans as the size of the loan decreases (in the case of SMEs), the fixed transaction costs in credit assessment and monitoring increases per unit costs increases (Berger, et al., 2005; Hall, et al., 2000; Uchida, 2011). Therefore, the average cost incurred by the banks in allocating loans to SMEs is higher than that of larger firms. The banks have resorted to the use of high interest rate and shorter duration of borrowing to offset the high cost of lending and the risk of SME information asymmetry (Beck, et al., 2008; Berger & Black, 2011; St-Pierre & Bahri, 2011). Therefore, higher the interest rate charged on the loan amount, more security is guaranteed for the banks to recover its investment in the event of a loan default by the SMEs. The short term loan was cost effective for the banks through reduction of risk exposure and quick recovery of their investment avoiding liquidity gap (Berger & Udell, 2006; Chittenden, Hall, & Hutchinson, 1996). Hence, the literature indicated that banks favour firms who were willing to pay higher interest rate and borrowing for a shorter duration.

The accessibility to bank loan also depends on the loan repayment capacity of the firm which is measured in terms of size of the collateral mortgaged and size of owner's equity or investment into the business (Berger & Udell, 2006; Holmes, et al., 2003; Uchida, 2011). According to Steijvers, Voordeckers, and Vanhoof (2010) collateral is an instrument of risk management adopted by the lenders relevant to credit granting decisions to SMEs. Prior empirical works (Menkhoff, Neuberger, & Suwanaporn, 2006; Steijvers, et al., 2010; Uchida, 2011) testify that the bank's supply of credit is determined by the size of the collateral a firm pledged against the loan amount even though it did not necessarily eliminate the informational opacity of the borrowers. There is strong evidence supporting that higher the value of collateral, easier it was for the firms to access external financing since it serves the loan recovery guarantee for the banks (Bester, 1987). SME owner's equity into business is associated with owner's seriousness to do the business increasing banks' confidence and enhancing its chances of securing loan from the banks (Steijvers, et al., 2010). Therefore, collateral and equity-based lending was found to induce positive moral hazard behaviour in SMEs reducing loan repayment failure and also serving as a safety net for the banks to recover its investment in SMEs (Uesugi & Ono, 2009). In the presence of information asymmetry, the collateral and owner's equity overcame the risk of non-repayment of loan and boosted the confidence of the banks to initiate loan contracts to the SMEs. A firm owning more collateral and owner's equity created higher value of the firm reducing the information asymmetry related riskiness of SMEs, suggesting a positive relationship between collateral and access to debt financing. However, these tools adopted by the banks such as high interest rate, short term loan and high collateral requirement caused serious adverse effect on SMEs further worsening the inaccessibility of credit by SMEs (Hyytinen & Väänänen, 2006).

#### **Quantitative Research Methodology: SMEs Survey**

The quantitative research methodology was adopted to investigate SME's accessibility to the bank loan through regression analysis. The methodology is deductive and confirmatory in nature where hypotheses is tested empirically using data to support or reject the stated hypothesis (Creswell, 2009). Due to lack of information on SMEs in Bhutan, particularly financial information, a field survey questionnaire carried out to collect primary data from the SME owners in the form of cross-sectional data for the year 2013. A sample of 200 SME owners located in two cities of Thimphu and Phuntsholing Bhutan was chosen through random sampling to represent the whole population of SME establishments in Bhutan including the micro and cottage firms. The advantage of random sampling is that it offers opportunity to each individual in the population to be selected and represent a segment of the population (Creswell, 2009; Rea & Parker, 2005). Furthermore, these places have highest SME population with a good representation of all the industrial sectors like retail or trading, manufacturing and service industries enriching the sample of the study (NSB RGOB, 2013). For data collection, Rea and Parker (2005) advocated the importance of well-developed survey questions based on strong theoretical foundations to obtain unbiased and reliable information. Thus, the survey questionnaire consisting of both open-ended and close-ended questions was

developed from extensive and in-depth literature to collect holistic information on firm and owner demographics and financial information to generate variables of the research model. Also, face to face questionnaire survey (Rea & Parker, 2005) provided direct interaction with SME owners increasing the survey response rate. The validity and reliability (Creswell, 2009) of survey questionnaire were carefully considered and appropriate steps undertaken while developing the survey questionnaire and pre-testing prior to actual field survey to collect error-free data and produce reliable and consistent results. Complying with Victoria University's ethical procedure, ethical clearance was obtained from Victoria University's Human Research Ethics Committee (VUHREC) and Ministry of Economic Affairs, Bhutan to carry out fieldwork in Bhutan.

### **Descriptive Statistics of the Sample**

The descriptive statistics describes characteristics of the sample in terms of mean, mode, and median; standard deviation; frequency distributions tables and graphs to help understand the basics of the data (Creswell, 2009; Hair, Tatham, Anderson, & Black, 2006). The survey response rate was high (88%) with the return of 176 questionnaires from a total of 200 sets of questionnaires distributed. The descriptive statistical analysis of the sample (annexure: table 1) depicted a picture of a developing economy with the majority of the sample consisting of small (78.89%) and micro firms (10.80%). The medium sized firms made up only 10.23% of total sample size. The firm age range varied from 2 years to over 30 years with an average firm age of 8.9 years (annexure: table 2). The age of the majority of the firms (40.34%) was between 6-10 years followed by 34.09% firms with 1-5 years. Hence, most of the sample firms were young and established within the last ten years. The break-up of sample based on the firm sector revealed that majority of the sample was involved in the service sector (46.59%) followed by 39.2% in the retail sector and 14.21% in the manufacturing sector. Also, 94.16% firms were classified as sole proprietorship and 5.84% as partnership defining the characteristics of SME sector of a developing economy. As per the table (annexure: table 3), the gender of the sample was dominated by the male with 63.07% to women's representation of 36.93%. The respondents' age varied from 21 to 60 years old with an average age of 36 years. The majority of respondents (47.73%) were aged between 26-35 years old followed by 26% respondents aged between 36-45 years old, representing a young age group sample. The educational level of the respondents reflected a basic level with the majority respondents (43.18%) studying only up to the level of high school, 23.86% with vocational education level and 16.48% respondents with the bachelor degree. On the lower end, 8.38% respondents did not have any formal education, 6.25% had primary school education followed by a minimal 1.14% respondents with the postgraduate qualification. Based on table (annexure: table 4), the financial management of sample was very poor with only 28.41% of firms using professional accountants to manage their business finances while remaining 71.59% firms' accounts were managed by owners themselves who did not have required expertise. The average interest rate charged on loan by the banks was 13.56% and average loan term was 3-5 years (annexure: table 5). The highest interest rate charged was 16% and a minimum of 12%. The majority of respondents (91.48%) used personal assets as collateral to secure loans from the banks while another 67.05% respondents used business assets (annexure: table 6). The size of collateral provided by the firms in proportion to loan amount received from the banks was relatively on the higher end. About 70.45% respondents mortgaged collateral worth two times the loan amount followed by 13.64% mortgaging equal to the loan amount.

### **Regression Analysis and Results**

The study has used Multiple Linear Regression (MLR) model to quantify the relationship (hypotheses testing) between the factors identified through extensive literature review SMEs' and accessibility to the bank loan. The regression analysis was carried out by using Stata/IC 13. Regression analysis is one of the most widely used statistical tools for discovering the relationships amongst different variables of the study

(Gujarati, 2005; Wooldridge, 2009). MLR is relevant to SME related research because of its simplicity enabling the researchers to explore the functional relationship between multiple variables of both quantitative and qualitative nature (Wooldridge, 2009). Based on literature (Tabachnick & Fidell, 2007), natural logarithm function of DA ( $\ln\_DA$ ) and INTFIN ( $\ln\_INTFIN$ ) were taken to fit into the MLR model to resolve the issue of extreme positive skewness (normality failure), thereby minimizing the estimation sensitiveness of the outliers of these variables (annexure: fig1 and fig2).

The research model is presented as:

$$\ln\_DA = \alpha + \beta_1 AGEF + \beta_2 SIZEF + \beta_3 SECF + \beta_4 AGE0 + \beta_5 GENO + \beta_6 EDUO + \beta_7 FININFO + \beta_8 INT + \beta_9 TERM + \beta_{10} COLL + \beta_{11} \ln\_INTFIN + e$$

#### Dependent Variable:

DA = Debt accessibility (accessibility to bank loan measured in terms of size of loan)

#### Independent Variables:

$\alpha$	= Intercept term
$\beta$	= Regression coefficient
AGEF	= Age of the firm
SIZEF	= Size of the firm
SECF	= Sector of the firm
AGE0	= Age of the owner
GENO	= Gender of the owner
EDUO	= Educational level of the owner
FININFO	= Financial information of the firm
INT	= Interest rate charged on the loan
TERM	= Loan term (duration to pay off a loan)
COLL	= Collateral size
INTFIN	= Internal finance (owner's equity)
e	= Error term

#### 1. Diagnostic Tests

Prior to regression analysis, the qualitative variables of the study were converted into continuous dummy variables through binary coding process, suitable to be used in the regression model (Wooldridge, 2009). Accordingly, the coefficients of these dummy variables estimated the effect of these categorical variables on the SME debt accessibility, by keeping one of the dummy coded variable as a reference variable. Econometric problems associated with MLR such as multicollinearity, heteroskedasticity and model misspecification (Davidson & MacKinnon, 2004) were diagnosed and addressed with corrective measures. The model specification error is caused mainly by the omission of independent variables in the model interfering with regression analysis (Gujarati, 2005). The regression specification error test (RESET) result with p-value (Prob>F) of 0.193 higher ( $p > 0.05$ ) provided evidence that the model did not suffer from the omission of variables. The issue of multicollinearity is caused by high correlation of two or more independent variables where the variables' individual effect on the dependent variable cannot be measured accurately undermining the accuracy of the regression model (Davidson & MacKinnon, 2004). The Variance Inflation Factor (VIF) test (annexure: table 7) for each independent variable was reported within the acceptance range (1-10) proving that there was no problem of excessive multicollinearity (Gujarati, 2005) in the regression model. The assumption of homoscedasticity is defined as the homogeneity of variance of the error term of the regression equation for any value of the independent variable (Hair, et al., 2006). Violation of this requirement results in the phenomenon of

heteroskedasticity, where the error term has unequal (increasing) variance rendering test statistics invalid and undermining the accuracy of the model (Hair, et al., 2006). The Breusch-Pagan/Cook-Weisberg (BP/CW) test results with of large  $\chi^2$  value (21.15) and small p-value (0.000) indicated the presence of heteroskedasticity, in the model, which was then addressed using the robustness test to achieve robust standard error (Wooldridge, 2009).

## 2. Regression Analysis and hypothesis testing

Based on the regression output (Table 1), the value of  $R^2$  is 0.675 indicating that approximately 67.5% of the variability in log function of SMEs' (ln\_DA) accessibility to the bank loan is explained by the independent variables listed in the model. Since the  $R^2$  value is closer to 1, it provided enough evidence to validate that overall goodness of fit for the regression model is very significant (Tabachnick & Fidell, 2007; Wooldridge, 2009). t- statistics and its corresponding p-values determines and estimates the degree of precision of the model, in terms of assessing individual variable significance while  $\beta$  coefficient measures the strength of the relationship between the independent variable and the dependent variable (Gujarati, 2005; Wooldridge, 2009). Hypothesis testing is as a process whereby a statement about a population is tested using data available of a sample to see if it holds true or not, based on estimation of regression model (Gujarati, 2005; Hair, et al., 2006). Hence, based on the p-values and t-statistics of each independent variable, the null hypothesis ( $H_0$ ) was either rejected or failed to reject at 95% confidence level.

**Table 1.** MLR Results

Number of observations	176		
F( 23, 152)	15.08		
Prob > F	0		
R-squared	0.675		
Root MSE	0.597		
ln_DA	Coef.( $\beta$ )	t	P>t
AGEF	0.030	2.48	0.014
SECF			
Manufacturing	-0.149	-0.91	0.362
Service	-0.118	-1.07	0.284
SIZEF			
Small	0.360	2.62	0.010
Medium	0.983	3.72	0.000
AGEO			
26-35	0.366	2.24	0.027
36-45	0.911	1.88	0.061
46-55	0.156	0.78	0.434
over 55	0.018	0.14	0.886
GENO			
male	-0.150	-1.66	0.099
EDUO			
Primary School	-0.068	-0.37	0.710



High School	0.300	1.66	0.100
Vocational	0.444	2.35	0.020
Bachelor Degree	0.481	2.20	0.029
Postgraduate	0.212	0.37	0.708
FININFO			
Low	0.174	1.60	0.111
Medium	0.014	0.11	0.909
High	0.371	1.71	0.089
Very High	1.294	2.46	0.015
INT	0.223	2.93	0.004
TERM	0.271	3.32	0.001
COLL	0.170	3.28	0.001
ln_INTFIN	0.243	2.80	0.006
_cons	5.070	3.68	0.000

## 2.1 Firm Characteristics (Hypothesis 1)

Since the firm characteristics consisted of firm age, size and sector, Hypothesis 1 (H1) was divided into three sub-hypotheses (H1A, H1B, H1C) encompassing individual variables.

### Firm Age and Debt Accessibility

H1A: *Accessibility to the bank loan (DA) is correlated to the firm's age (AGEF)*

H1A<sub>0</sub>: *There is no linear relationship between firm age (AGEF) and accessibility to the bank loan (DA)*

The p-value ( $0.014 < 0.05$ ) and t-statistics ( $2.48 > 1.96$ ) of AGEF were statistically significant providing enough evidence to support H1A that the accessibility to the bank loan is determined by firm's age and reject the null hypothesis (H1A<sub>0</sub>). The coefficient of AGEF indicated a positive relationship between the firm age and its accessibility to the bank loan where an increase in the firm age by one year, increased the loan accessibility by 3.1% keeping the other variables constant. This hypothesis is economically significant, as it implies that the number of years in the business plays an important role in determining firm's accessibility to bank loan. The findings are in consistency with prior studies (Degryse, et al., 2012; Irwin & Scott, 2010; Paul, et al., 2007) emphasizing that it is easier for older firms to access bank loans compared to younger ones. The banks are more confident to lend to older firms with established track record and reputation in the financial market to meet their loan repayment obligations lowering the information asymmetry (Ang, 1991, 1992; Bhaired & Lucey, 2010). Therefore, the result of the study reinforced the positive correlation between the firm age and its accessibility to the bank loan.

### Firm size and Debt Accessibility

H1B: *Accessibility to the bank loan (DA) is correlated to the firm's size (SIZEF)*

H1B<sub>0</sub>: *There is no linear relationship between firm size (SIZEF) and accessibility to the bank loan (DA)*

Firm size (SIZEF) represented by three dummy variables micro (S1), small (S2) and medium (S3) sizes was hypothesized to be correlated to bank loan accessibility, keeping S1 as the reference variable. The p-values and t-statistics of S2 ( $p = 0.010 < 0.05$ ;  $t = 2.62 > 1.96$ ) and S3 ( $p = 0.000 < 0.05$ ;  $t = 3.72 > 1.96$ ) were statistically significant indicating that the accessibility to bank loans is determined by size of the firm, supporting hypothesis H1B. Hence, the small and medium sized firms were statistically in a better position than micro firms in accessing bank loans. The  $\beta$  values indicated that small sized firms had

36% and medium sized firms had 98% higher accessibility to bank loans in comparison to micro firms. The results are in line with prior studies (Beck, et al., 2008; Cassar, 2004) that associated larger firm's easier access to external finance due to lower information asymmetry giving them edge over smaller firms with high informational opacity. Hence, smaller firms were found to be more financially constrained in comparison to the larger firms. Similar to firm age, the firm size was used by the banks as proxies to evaluate SME loan application in absence of required information (Ang, 1991; Binks, et al., 1992; Holmes, et al., 2003). Thus, the results reinforced that bigger firms were in better position than smaller firms in getting access to bank loans.

#### Firm Sector and Debt Accessibility

H1C: *Accessibility to the bank loan (DA) is correlated to the firm's sector (SECF)*

H1C<sub>0</sub>: *There is no linear relationship between firm sector (SECF) and accessibility to the bank loan (DA)*

The variable firm sector (SECF) was represented by three dummy variables retail (SEC1), manufacturing (SEC2) and service (SEC3) sectors and hypothesized to be correlated to the bank loan accessibility as predicted by hypothesis H1C. The p-values and t-statistics of the variables SEC2 ( $p = 0.362 > 0.05$ ;  $t = -0.91 < 1.96$ ) and SEC3 ( $p = 0.284 > 0.05$ ;  $t = -1.07 < 1.96$ ) were not statistically significant in establishing its relationship with debt accessibility in reference to SEC1. It indicated that debt accessibility of a firm is not determined by the firm sector, failing to reject the null hypothesis H1C<sub>0</sub> that there is no linear relationship between the firm sector and debt accessibility. The findings reflect the simplicity of SME sector in Bhutan where all the sectors are at the same level of development stage and are not seen differently by the banks. The result was in total contradiction to the literature that identified firm sector or industry as one of the determinants of SME debt ratio in addition to other firm characteristics (Hall, et al., 2000; Johnsen & McMahon, 2005). Therefore, rejecting the general perception, the study found that a firm's accessibility to the bank loan was not determined by sector of the firm and a firm belonging to any sector had equal chance of securing loan from the banks.

## **2.2 Owner Characteristics (Hypothesis 2)**

Since the characteristic of owners is defined by its age, gender, and educational qualification, hypothesis 2 (H2) has been divided into three sub-hypotheses (H2A, H2B and H2C) encompassing the individual variables.

#### Age of the owner and Debt Accessibility

H2A: *Accessibility to the bank loan (DA) is correlated to the owner's age (AGEO)*

H2A<sub>0</sub>: *There is no linear relationship between the firm owner's age (AGEO) and accessibility to the bank loan (DA)*

Since SME owner's age (AGEO) was collected in the form of age range, the variable AGEO was divided into five categorical variables A1 (18-25 years); A2 (26-35 years); A3 (36-45 years); A4 (46-55 years) and A5 (over 55 years) with A1 as the reference age group. A2 was the only age group that was strongly significant in establishing its relationship with DA with p-value of 0.027 ( $< 0.05$ ) and t-statistics of 2.24 ( $> 1.96$ ). Likewise, A3 with p-value of 0.061 ( $p < 0.10$ ) and t-statistics 1.88 ( $> 1.65$ ) was considered moderately significant in establishing its relationship with debt accessibility at 90% confidence level. Therefore, supporting the hypothesis H2A, SME owners within age range of 26-35 years and 36-45 years had 36.6% and 91% higher accessibility to the bank loans in reference the owners within age range of 18-25 years. However, the remaining age categories of A4 and A5 were not statistically significant in establishing relationship with debt accessibility due to higher values of p (0.886  $> 0.05$ ; 0.434  $> 0.05$ ) and t-statistics (0.14  $< 1.96$ ; 0.78  $< 1.96$ ) respectively. The graph of the positive relationship between owner's age and debt accessibility therefore, tends to dip after 45 years as indicated by regression results. The conclusion was drawn that the increase in owner's age from 18 till 45 years positively influenced firm's

accessibility to loans from banks, as indicated by the literature (Carter, et al., 2007; Irwin & Scott, 2010). Therefore increase in the owner's age created higher value to for the firm enhancing its accessibility to the bank loans.

#### Gender of the owner and Debt Accessibility

H2B: *Accessibility to the bank loan (DA) is correlated to the owner's gender (GENO)*

H2B<sub>0</sub>: *There is no linear relationship between the owner's gender (GENO) and accessibility to the bank loan (DA)*

The p-value (0.09>0.05) and t-statistics (-1.66<1.96) of GENO were statistically insignificant to support H2B that DA is correlated to gender (GENO) of the firm owner. Thus, in the absence of any statistical evidence, the sample firms showed no relationship between the gender of the SME owner and accessibility to the bank loan. The findings that the bank loan accessibility was not determined by gender of SME owner was in contradiction to the majority of existing literature (Carter, et al., 2007; Coleman, 2000; McKechnie, et al., 1998; Rand, 2007). The general perception is that there is gender disparity and female SME owners face more difficulty in accessing finance which is more prominent in the developing countries. Though unexpected from theoretical context, the findings may be attributed to the country's cultural and social context as reported by earlier studies (Bellucci, Borisov, & Zazzaro, 2010; Martinelli, 1997). The Bhutanese society at large is matriarchal in nature with no gender divide. The Bhutanese women have equal right and opportunity as men as dictated by the constitution. Based on the regression results, the study established that there was no gender disparity in gaining accessibility to the bank loans. At the same time, the descriptive statistics of the sample with 36.93% of female representation calls for an in-depth research on the relationship between gender and loan accessibility.

#### Educational Qualification the owner and Debt Accessibility

H2C: *Accessibility to the bank loan (DA) is correlated to the owner's educational qualification (EDUO)*

H2C<sub>0</sub>: *There is no linear relationship between the owner's educational qualification (EDUO) and accessibility to the bank loan (DA)*

The variable owner's educational qualification (EDUO) was categorized into six dummy variables E1 (No formal education); E2 (Primary school); E3 (High school); E4 (Vocational education); E5 (Bachelor degree) and E6 (Postgraduate degree), with E1 as the reference category. The results of variables E4 ( $p=0.020<0.05$ ;  $t=2.35>1.96$ ) and E5 ( $p=0.029<0.05$ ;  $t=2.20>1.96$ ) were statistically significant in establishing relationship between SME owners with vocational education and bachelor degree and accessibility to bank loans. Similarly, variable E3 with p-value of 0.100 and t-statistics of 1.66 was found to be significant at 90% confidence level. The individual coefficient established that the SME owners with high school qualification had 30% more, vocational education had 44% more and bachelor degree had 48% more accessibility to bank loans than owners with no formal education. However, the categories E2 and E6 with p-values of 0.710 and 0.708 and t-test statistics of 0.39 and 1.32 respectively, were statistically insignificant, indicating there was no difference in loan accessibility between owners with no formal education and owners with primary school and postgraduate degree. Since primary school being the lowest level of formal education, the banks are not confident enough to invest in them. The insignificant result of postgraduate degree which is in contradiction to the literature (Altman, Sabato, & Wilson, 2010) could be associated to the very small representation of SME owner with higher educational qualification in the Bhutanese SME sector as reported in descriptive statistics (annexure: table 3). The higher educational qualification of the owner is associated with enhanced quality and performance of the enterprises and lower default risk. Therefore, the overall regression results supporting the hypothesis H2C reinforced that education of SME owner plays an important role in determining the access to bank loans as predicted by literature.

### 2.3 Firm Financial Information (Hypothesis 3)

The independent variable financial information of the firm (FININFO) was calculated by identifying different types of financial statements (sales, profit and loss statement, balance sheet etc.) maintained by the firms and the financial knowledge of the person handling the firm financials. The firm maintaining more number of financial statements and the financial expertise was given higher ranking. Hence, FININFO was divided into five dummy variables F1 (very low level information), F2 (low level information), F3 (medium level information), F4 (high level information) and F5 (very high level information).

#### Quality of Financial Information and Debt Accessibility

H3: *Accessibility to the bank loan (DA) is correlated to the quality of the financial information of the firm (FININFO)*

H3<sub>0</sub>: *There is no linear relationship between the quality of the firm financial information (FININFO) and accessibility to the bank loan (DA)*

The regression output indicated that the F5 had significant p-value ( $0.015 < 0.05$ ) and t-statistics ( $2.46 > 1.96$ ) in reference to control category F1. Similarly, category F4 was also found to be significant at 90% level of confidence with its p-value ( $0.08 < 1.00$ ) and t-statistics ( $1.71 > 1.65$ ). Therefore, there was enough evidence to support the hypothesis H3A that there was a linear relationship between the high and very high level of financial information and bank loan accessibility. Based on the regression coefficients, firms with the high and very high level of information had 37% and 129% more accessibility to bank loans in comparison to the firms with very low level financial information. However, the p-values (0.111; 0.909) and t-statistics (1.60; 0.11) of variables F2 and F3 respectively validated that these categories were not statistically significant and failed to reject the null hypotheses H3A<sub>0</sub>. Thus, the firms with no financial information and firms with very low and medium level of financial information had the same level of accessibility to the bank loans. The overall results established that the quality and quantity of financial information was positively related to the debt accessibility, where SMEs with the higher value of financial information had easier access to bank loans in line with prior studies (Allee & Yohn, 2009; Caneghem & Campenhout, 2012). The survey also brought to the attention that the Bhutanese SMEs' had poor financial management practices hampering its quality and quantity of financial information, prevailing feature of the developing countries (Drever, et al., 2007; Moro, Fink, & Kautonen, 2014; Rao, 2003). SMEs' lack of information and inadequate accounting practices enhanced the information asymmetry rendering them as a high risk investment and hindering its access to bank loans. Hence, it will be of advantage to SMEs to increase their level of financial information which will enhance their accessibility to bank loan as recommended by Allee and Yohn (2009).

### 2.4 Loan Characteristics (Hypothesis 4)

Loan characteristic has been described in terms of the interest rate (INT) charged on the loan and the duration of the loan (TERM) for the purpose of the study. Accordingly Hypothesis 4 (H4) was divided into two sub-hypotheses H4A and H4B encompassing the individual variables.

#### Interest rate on loan and Debt Accessibility

H4A: *Accessibility to the bank loan (DA) is correlated to the rate of interest charged on loan (INT)*

H4A<sub>0</sub>: *There is no linear relationship between size of the rate of interest on loan (INT) and accessibility to the bank loan (DA)*

The p-value ( $0.004 < 0.05$ ) and t-statistics ( $3.32 > 1.96$ ) calculated for variable INT were found to be statistically significant. Thus, hypothesis H4A stating accessibility to bank loan is correlated to the rate of interest on the loan was fully supported by the empirical results. The coefficient of INT indicated that the

firms willing to pay one unit increase in the interest rate enhanced their accessibility to bank loan by 22%. The result provided enough evidence to support that the loan accessibility was positively influenced by the interest rate on the loan as predicted by prior studies (Berger & Udell, 1995; Irwin & Scott, 2010; St-Pierre & Bahri, 2011). According to literature, banks resorted to stringent lending terms like high interest rate, large collateral and shorter loan term to minimize the SME risk associated with SMEs' high information opacity and inadequate financial management practices (Allee & Yohn, 2009; St-Pierre & Bahri, 2011; Takagi, 2002). The empirical results reinforce that SMEs in Bhutan are also levied high interest rate on the loans by the banks. The SME survey also revealed that the majority respondents considered the interest rate charged was on the loan by the banks was comparatively on the higher end aggravating SMEs inaccessibility to external finance.

#### Duration of loan and Debt Accessibility

H4B: *Accessibility to the bank loan (DA) is correlated to the duration of the loan (TERM)*

H4B<sub>0</sub>: *There is no linear relationship between size of the duration of the loan (TERM) and accessibility to the bank loan (DA)*

The p-value ( $0.001 < 0.05$ ) and corresponding t-statistics ( $3.32 > 1.96$ ) calculated for variable TERM was found to be statistically significant and evidenced that there was relationship between loan duration and accessibility to bank loan supporting the hypothesis H4B. The coefficient of TERM, indicated that with a unit increase in the loan term, the accessibility to bank loan was increased by 27%. Since the coefficient of TERM is positive, the study result is in complete contradiction to the existing literature (Berger & Black, 2011; Berger, et al., 2005; Uchida, 2011) that supports the view that bank prefer short term loans over long term loans. The banks preferred to finance SMEs seeking loans for a shorter duration because short term loans are cost effective and low-risk enabling banks to recover their investment faster (Chittenden, et al., 1996; Rao, 2003). The regression results of the study on the other hand, indicated that longer the duration of the loan, easier was the accessibility to bank loans. The anomaly in the regression result may have been caused due to the fact that the regression analysis was carried out on the sample where the majority (80%) had availed short term loan of 1-5 years (annexure: table 5). Though the study did not provide strong evidence on the relationship between loan term and loan accessibility, the final inference of the study was based on descriptive statistics that duration of loan term was inversely correlated to loan accessibility as predicted by existing literature. Hence, the firms seeking short term loan had better accessibility to the bank loans than firms seeking long term loans.

### **2.5 Loan Repayment Capacity (Hypothesis 5)**

The loan repayment capacity of the firm was measured in terms of the size of collateral provided (COLL) to the bank and the size of internal finance (INTFIN), owner's contribution injected in the business. Thus, Hypothesis 5 (H5) has been divided into two sub-hypotheses H5A and H5B encompassing the individual variables.

#### Collateral Size and Debt Accessibility

H5A: *Accessibility to the bank loan (DA) is correlated to size of the collateral (COLL)*

H5A<sub>0</sub>: *There is no linear relationship between size of the collateral (COLL) and accessibility to the bank loan (DA)*

The p-value ( $0.001 < 0.05$ ) and t-statistics ( $3.28 > 1.96$ ) calculated for variable COLL was found to be statistically significant to support hypothesis H5A that the accessibility to the bank loan (DA) was correlated to the size of the collateral. The coefficient of COLL indicated that for one unit increase in the collateral value, the accessibility to bank loan was increased by 17%, keeping other variables constant. The study provided strong evidence to prove that there is a positive relationship between size of collateral pledged by SMEs and debt accessibility from the banks as predicted by prior studies (Holmes, et al.,

2003; Steijvers, et al., 2010). Thus, higher the value of collateral pledged by the SMEs, easier it was to secure loans from the banks. Banks use collateral to overcome the high risk posed by SMEs' information asymmetry and moral hazard (Beck, et al., 2013; Chakraborty & Hu, 2006). It lowers the default risk exposure for the banks, providing them with an alternative to recover back their investment in case of loan default on the part of the SMEs. Though the collateral requirement acts as a safety net for the banks, it negatively affects SMEs' financial condition making them more credit constraint and accentuating the SME financing gap (Bester, 1987; Cowling, 1999).

#### Size of Internal Finance and Debt Accessibility

H5B: *Accessibility to the bank loan (DA) is correlated to the size of internal finance (INTFIN)*

H5B<sub>0</sub>: *There is no linear relationship between size of the size of internal finance (INTFIN) and accessibility to the bank loan (DA)*

The p-value ( $0.006 < 0.05$ ) and t-statistics ( $2.80 > 1.96$ ) calculated for variable INTFIN was found to be statistically significant to support the hypothesis H5B stating that accessibility to bank loan is correlated to the size of owner's equity into the business. The coefficient of INTFIN, indicated that for one unit increase in internal finance provided by the owner, the accessibility to bank loan was increased by 24%. Similar to the collateral, owner's equity is used to as a tool to resolve high risk of information asymmetry in SME lending. The size of owner's equity was equated to seriousness of SME owners and true intention in regards to the business project (Cowling, 1999; Daniel & Nicolae, 2011; Uchida, 2011). Therefore, the size of owner's investment in the business is directly proportional to accessibility to loan as it raises the firm value in terms of loan repayment capacity in the eyes of the lenders. Bigger the size of owner's investment in the business, greater was the commitment of SME owner towards the success of the business reducing moral hazard behaviour in SMEs (Hyytinen & Väänänen, 2006). The survey also reported that the majority sample (87%) had invested their personal savings into business indicating that owner's equity is equally essential like collateral to successfully avail bank loans. Hence, there is strong evidence to prove that there is a positive relationship between size internal finance and debt accessibility from the banks.

#### **Theoretical Contribution and Practical Implications**

Given SME's significance in the socio-economic development of a country, substantial literature is available on SME financing constraints but is limited to the developed economies questioning its applicability to the developing countries like Bhutan. Furthermore, a similar academic research has not been carried out on the Bhutanese SME sector. To the researcher's knowledge, this is the first academic study of Bhutanese SMEs that investigates the SMEs' accessibility to bank loans. The information available on Bhutanese SMEs are study reports carried out by the Bhutanese government and international development organizations focused on general constraints faced by SMEs and not addressing finance in particular. In addition, the literature is focused on the higher end of SME spectrum while neglecting the lower end (micro enterprises), which forms a major part of the developing countries' SME population. Therefore, by including micro firms in the sample population, the study has made a major contribution in terms of the literature gap in regards to lower end of the SME spectrum.

SME financing constraint is a key challenge faced by developing countries and a study like this one investigating the issue of SMEs' inaccessibility to bank loans bears a huge significance to the socio-economic growth of a country. The study findings provide a better understanding of the SME financing constraints to all stakeholders starting from SMEs, banks, and the policy makers. The role of the government is undeniable and well-examined and defined monetary and fiscal measures at the policy level can benefit SME sector to access finance and stimulate its growth. The lending terms and conditions are lopsided to the advantage of the banks, imposing high interest rate and collateral demands on SMEs. Hence, the role of government has to be concentrated on creating a sound policy monetary environment to

facilitate development of a sound SME financial market in terms of interest rates and collateral requirements levied on the SME sector. The government should work towards a sound financial environment where there is no discrimination between SMEs and larger firms with equal opportunity to access external finance.

In addition to fiscal interventions at the macroeconomic level, the government has to continue providing direct interventions in the form of credit guarantee schemes, subsidized interest, and tax exemptions to reduce the severity of financial constraints and stimulate the growth of SMEs in particular for starting businesses. As indicated by the study findings, the inherent issue that needs to be addressed is the information asymmetry between the SMEs and the banks. Therefore, the SMEs are recommended to take proactive role in enhancing its financial information management to increase their financial credibility in the eyes of the lenders. Becoming more financially transparent will not only mitigate the issue of information asymmetry and risk with the banks but also enable SMEs to make informed decisions regarding their business operations. Furthermore, a regulation from the government that obligates SMEs to maintain proper and audited financial statements will go long way in resolving the biggest issue of information opacity of the SMEs. Despite high cost involved in engaging in SME financing, the SME sector also offers a large market to the banks owing to the number of SMEs in the economy. Therefore, the banks are recommended to tailor-make financial products directly addressing the needs of SME sector and exploring alternatives to collateral based loans to tap the large SME market.

### Conclusion

The study provided an insight into the ground reality of SMEs' inaccessibility to finance in emerging economies with Bhutan as a case study. The theoretical prediction of PoH, information asymmetry, and agency theory that smaller and younger firms are associated with higher information opacity and higher risk was applicable to the case of Bhutanese SME sector. The sample of Bhutanese SMEs confirmed that firm age and size; owner age and educational qualification; firm's financial information; loan term and interest; collateral and internal finance had positive significance on SMEs' accessibility to bank loans, in agreement with the existing literature. However, the firm sector and SME owner's gender did not have any influence on its loan accessibility, in contradiction to the existing literature. The study revealed the main cause of inaccessibility to bank loan is high information asymmetry between the SMEs and the banks leading to other financing constraints. In absence of required information, the banks adopted strict lending mechanism to overcome the high risk involved in SME lending by increasing loan interest rates, collateral size and owner's equity in the business aggravating the financial distress of the SMEs. The small size of the study sample was limited to the urban areas only and therefore, a larger sample size of SME owners covering both urban and rural region is recommended for future research to achieve more in-depth information about the SME financing constraints. A comparative study between SMEs in urban and rural regions and male and female owned firms are interesting topics for future research.

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**Annexure:**

**Table 1.** Business Classification, Sector and ownership

Business Classification	Business Sector			Business Ownership		Total	Percent
	Manufacturing	Retail	Service	Partnership	Sole Ownership		
Micro	1	13	5	0	19	19	10.80
Small	18	52	69	11	128	139	78.97
Medium	6	4	8	4	14	18	10.23
<b>Total</b>	<b>25</b>	<b>69</b>	<b>82</b>	<b>15</b>	<b>161</b>	<b>176</b>	<b>100</b>

**Table 2.** Firm Age Range

Firm Age Range (in years)	Frequency	Percent
1-5	60	34.09
6-10	71	40.34
11-15	25	14.2
16-20	8	4.55
21-25	6	3.41
over 25	6	3.41
<b>Total</b>	<b>176</b>	<b>100</b>
<b>Mean</b>	<b>8.93</b>	

**Table 3.** Gender and Age of SME Owners

Description	Frequency	Percent
<b>Gender</b>		
Female	65	36.93
Male	111	63.07
<b>Total</b>	<b>176</b>	<b>100</b>
<b>Age</b>		
18-25	16	9.09
26-35	84	47.73
36-45	47	26.7
46-55	20	11.36
over 55	9	5.11
<b>Total</b>	<b>176</b>	<b>100</b>
<b>Mean (age)</b>	<b>36.15</b>	
<b>Education</b>		
Postgraduate Degree	2	1.14
Bachelor Degree	29	16.48
Vocational Education	42	23.86
High School	76	43.18

Primary School	11	6.25
No Education	16	9.09
Total	176	100

**Table 4.** Types of Financial Statements Maintained by SMEs

Financial Records prepared by	Frequency	Percent
1. Professional Accountant	50	28.41
2. Owner	126	71.59
• <i>with financial accounting knowledge</i>	49	38.89
• <i>without financial accounting knowledge</i>	77	61.11
Total	176	100

**Table 5.** Loan Characteristics

Interest Rate on Loan	Frequency	Percent
16%	1	0.57
15%	11	6.25
14.50%	1	0.57
14%	70	39.77
13.75%	1	0.57
13.50%	14	7.95
13%	50	28.41
12%	13	7.39
Did not know the interest rate	15	8.52
Total	176	100
Mean           13.56		
Loan Time (loan duration)	Frequency	Percent
More than 5 years	36	20.45
3-5 years	98	55.68
1-2 years	40	22.73
Less than 1 year	2	1.14
Total	176	100

**Table 6.** Types of Collateral used as loan mortgage

Collateral Type	Frequency	Percent
Business Assets		
Yes	118	67.05
No	58	32.95
Personal Assets		
Yes	161	91.48

No	15	8.52
Total	176	100
Proportion of Collateral to Loan Amount	Frequency	Percent
None	2	1.14
Half	14	7.95
Equal	24	13.64
Double	12	6.82
More than two times	124	70.45
Total	176	100

**Table 7.** Variance Inflation Factor of the variables

Variable	VIF	1/VIF
AGEF	1.82	0.55
SECF		
Manufacturing	1.94	0.52
Service	1.47	0.68
SIZEF		
Small	2.36	0.42
Medium	2.95	0.34
AGEO		
26 - 35	3.6	0.28
36 - 45	2.37	0.42
46 - 55	2.72	0.37
Over 55	3.74	0.27
GENO	1.25	0.8
EDUO		
Primary School	1.84	0.54
High School	4.48	0.22
Vocational	4.25	0.24
Bachelor Degree	4.33	0.23
Postgraduate	1.52	0.66
FININFO		
Low	1.52	0.66
Medium	2.02	0.5
High	2.2	0.45
Very High	1.96	0.51
INT	1.18	0.85
TERM	1.41	0.71
COLL	1.56	0.64
INTFIN	2.06	0.48
Mean VIF	2.37	

Figure: Normality Testing of Numerical Variables

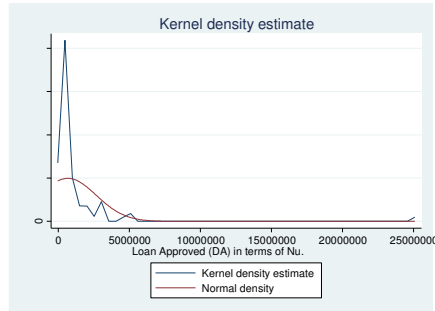


Figure 1a. Normality of DA

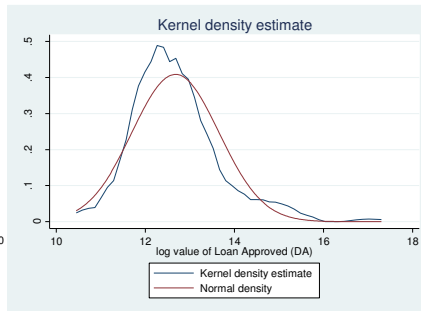


Figure1b. Normality of log\_DA

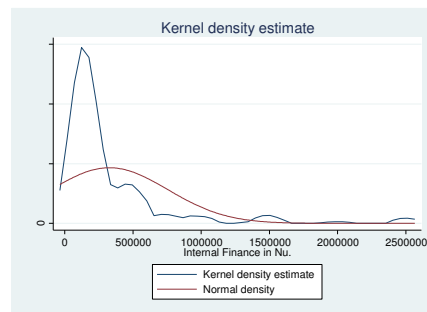


Figure 2a. Normality of INTFIN

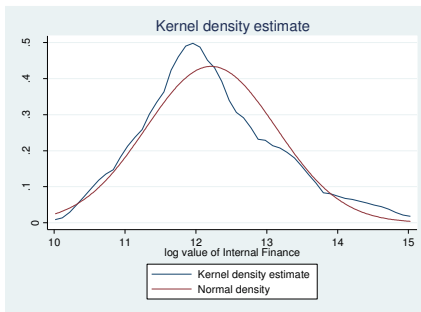


Figure2b. Normality of log\_INTFIN