

Analysis of Credit Rationing Among Construction Enterprises SMEs within Financial Institutions: A Case of Gauteng Province in South Africa.

Olanrewaju Abdul Balogun, Justus Ngala Agumba and Nazeem Ansary

Abstract— Economic diversification is a key policy goal for the Government of South Africa. SMEs offer a feasible option towards the actualization of this goal. The expansion of construction SMEs in South Africa, however is constrained by lack of access to bank credit. This constrained access to credit is argued in the literature to be due to the credit rationing behavior of banks emanating from asymmetric information in credit markets. Constrained access to credit stifles the growth potential of this vibrant sector which is increasingly generating employment opportunities especially for young enterprises. Department of Trade and Industry (DTI, 2007). This study therefore investigated the factors that influence the credit rationing behavior of banks towards SMEs. A deductive methodological approach was used to examine this problem. The structured survey questionnaire was administered to 179 construction small and medium organizations to elicit relevant data about their credit rationing. Binary logistic regression was applied to determine the influence of demographic variables on credit rationing. The statistical package for social science version 22 was used. The study findings suggest that the experience of SMEs reduces their probability of being credit rationed by banks. From the bank perspective the experience of SMEs is determined from their ability to keep proper financial statements, the performance of their bank accounts with the banks, and their ability to make profits. This calls for capacity building of SMEs in areas of business management (including financial record keeping) if they are to be rated as credit worthy borrowers by the banks. From the SMEs perspective, there is need for banks to improve their efficiency in terms of reduction of loan processing time and cost of borrowing (i.e. interest rate). This will improve access to bank credit by the construction SMEs and promote their growth thereby stimulating economic diversification, employment creation opportunities, and poverty reduction in line with South African Vision 2020

Keywords— *Construction, Enterprises (SMEs), Credit Rationing, Financial Institutions, South Africa*

I. Introduction

South Africa grieves from high unemployment with an official estimate of approximately 23.5% of the economically active population unemployed[49]. SMEs are therefore expected to be an important vehicle to address the challenges of job creation, sustainable economic growth, equitable distribution of income and the overall stimulation of economic development. In the South African context in the construction industry, small enterprise is defined as having less than 50 employees, having an annual turnover of less than R5million, while medium enterprises have between 51 and 200

employees and less than R20million turnover[37]. SMEs contribute immensely to the gross domestic product of most countries including South Africa. According to[53], firms are the vital force behind the progress of capitalism. The innovative activity of entrepreneurs feeds a creative “destruction process” by causing constant disturbances to an economic system in equilibrium, creating opportunities for economic. According to[40] SMEs are seen as a significant component of the solution to South Africa’s development issues which include poverty, income inequality and unemployment. However, the creation rate of SMEs in South Africa as measured by the total early-stage entrepreneurial activity is one of the lowest in the world.[29] observe that in 2008, South Africa ranked 23rd out of 43 countries, with a Total Early-Stage Entrepreneurial Activity (TEA) of 7.8% which was below the average rate (10.6%) of all the countries surveyed by global entrepreneurship monitor. Despite their importance to the economy in South Africa, small and medium construction enterprises (SME) sector is described as largely underdeveloped and lacking the managerial and technical skills and sophistication enjoyed by larger well established firms[20]. [41] opined that lack of knowledge including knowledge of pricing procedures, contractual rights and obligations; law, management techniques and principles as well as technology were a challenge to SMEs. Furthermore, SMEs are more likely to have limited formal education, which is based on a construction craft or trade training such as carpentry, plumbing, electrical installation and bricklaying. This training is probably in the form of learnership. Past studies in South Africa revealed constraints and challenges of capacity and financial resources among SMEs [24]; [1]. [26] inferred that SMEs are not able to access finance or credit hence it stifles their growth and capability.

According to[25] provides evidence that only 2% of SMEs in South Africa are able to access bank loans/credit and that the use of suppliers’ credit to SMEs is virtually non-existent.[3] put the use of trade credit to SMEs in South Africa at only 0.2%. [52] term this occurrence as credit rationing. According to[52] agency problems such as asymmetric information and moral hazards can impact on the availability of credit and hence the capital structure of SMEs.[52] termed this phenomenon credit rationing.

The core of the argument is that suppliers of finance may choose (due to asymmetric information, adverse credit

selection and monitoring problems) to offer an array of interest rates that would leave a significant number of potential borrowers without access to credit. This is a contrast to the situation in most developed countries.[50] points out that 45% of SMEs are able to access trade credit. Creditors play a dominant role in the SMEs venture creation process. A study by the [[34],[38] on the capital structure decisions of SMEs in the United States of America finds that contrary to widely held beliefs that SMEs rely heavily on capital from family and friends, external debt financing such as bank credit and trade credit are the more common sources of funding for many new SMEs during their first year of operation. This is consistent with the pecking order theory, which expects firms to first use internal equity before moving to debt and external equity. Availability of debt finance (both from banks and trade creditors) is one of the reasons for high levels of entrepreneurship and relatively low failure rate of SMEs in developed countries.

II. Research Problem

Access to formal credit markets is important for the growth and development of the firms [39]. South Africa credit market consists of formal and informal credit markets. The formal credit markets in South Africa include commercial banks, merchant/investment banks, insurance companies, the National Development Bank, South Africa Savings Bank, South African Building Society, and the Johannesburg stock exchange and South Africa Reserve Banks (SARB, Annual Report, 2006). Historically, the formal credit market in South Africa has been dominated by commercial banks, which are the major suppliers of credit to households and private businesses. To enhance the efficiency of accessibility to funds and to improve access to a wider variety of services in the formal credit markets, South Africa government implemented a number of financial sector reforms which included licensing of additional commercial banks and other financial institutions, review of the Banking Act to widen the definition of banking beyond the commercial banks and leasing companies to include merchant banks and discount houses, removal of restrictive licensing policies and reducing the role of government in the financial sector.[37]

Liberalized financial sector in South Africa was expected to result in efficient financial intermediation and make access to loanable funds easier for potential borrowers, thereby bringing about increased investments, higher productivity among all economic units in the economy, and creation of employment opportunities [57].[31].A number of donors over the years also tried promoting credit schemes targeted at small and micro-enterprises (SMEs), including a USAID-sponsored credit guarantee scheme. Some external funding agencies also

provide credit to local entities, often via Government (e.g. donor support for Women's Finance House, or African Development Bank [ADB] loans to National Development Bank [NDB]). These government credit programmes can be classified as part of the formal financial sector which provide enterprise finance. By implication, there is increased supply of formal sector credit (from banks and government credit schemes) which should relax the credit constraints to firms and enhance their growth.

Despite all these developments, there is evidence of constrained access to bank credit by SMEs despite the major role that they play in the fight against poverty in Botswana through creation of employment opportunities. In 2005/06 informal sector workers were estimated to be 156,515, which accounted for about 20% of the labour force. In 1995/96, employment in the informal sector was 57,950, which was about 11% of the labour force [20] it can be seen that employment in the informal sector has more than doubled over the survey periods.

However evidence by[13]suggests that the credit needs of SMEs are not adequately met. In the 1999 Informal Sector Survey, the major constraint reported by informal enterprises was lack of credit [26.3%] [20]. In the 2007 Informal Sector Survey, one of the major constraints reported by informal enterprises was lack of capital [15.6%] and the major assistance required was better access to loans [52.8%][20]. This implies that banks do not lend to everybody who can afford the price of credit, but apply some degree of credit rationing using non-price mechanisms [46]. Given the fact that the financial sector in South Africa is liberalized, the existence of imperfect information in the credit market may explain the credit rationing behavior of banks to maximize their profits. Credit rationing occurs when loan demand exceeds supply, and some borrowers receive no loans or less than the amount applied for at the prevailing market interest rates [30].

The constrained access to bank credit has the negative implication of stifling growth in SME sector, with serious implications for poverty and unemployment [44]. Informal sector credit is generally characterized by small loan amounts, short maturity periods and high interest rates which is not conducive for long-term enterprise development [46][56]. Most of the studies in this area have used descriptive statistics and the major contribution of this proposed study will be the econometric estimations of the determinants of financing constraints of SMEs in South Africa. The research question to be investigated by the study is "What factors influence banks' behavior to ration construction SMEs in Gauteng Province in South Africa?"

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A. **Objectives of the Study**

The aim of the study is to investigate the factors affecting construction SMEs access to bank credit in Gauteng Province in South Africa. The specific objectives of the study are to:

- Analyse the characteristics of construction SME which makes banks to credit-ration them in Gauteng Province in South Africa.
- Investigate the factors that influence the credit rationing behaviour of banks towards construction SMEs in Gauteng Province in South Africa.
- Derive policy implications to enhance access to bank credit by construction SMEs.

III. **Overview of Financial Liberalization in South Africa**

Since the 1980s, there has been an ongoing liberalization of the financial system in South Africa. Interest and credit controls were removed in 1980, while liquidity ratios of banks were reduced substantially between 1983 and 1985. Credit ceilings were abolished in 1980. However capital and foreign exchange controls were still maintained in the 1980s. Exchange controls on non-residents were eliminated and those on households relaxed in 1995 allowing them full access to the Johannesburg Stock Exchange (JSE) Securities Exchange and the South African Bond Exchange (SABE) [57].

South Africa's financial system is generally recognized as highly developed and sophisticated in comparison to other developing countries as well as to international standards. This is attributed to its skilled workforce, adequate capital resources, infrastructure and technology, and a conducive operating, regulatory and supervisory environment[37]. The Johannesburg Stock Exchange is ranked as the 18th largest stock exchange in the world in terms of market capitalization[14]. The South African Reserve Bank (SARB) guides interest rates, and controls liquidity through the interest rates on funds provided to the private banks. By 1997, South Africa had about 51 licensed banks. In addition, there were five mutual (or community) banks. Out of the 51 licensed banks, eight were branches of foreign banks, while 11 were subsidiaries of foreign banks. Today, there are about 60 banks

in South Africa, including 13 branches of foreign banks, and four mutual banks.

As previously mentioned South Africa liberalized both its lending and deposit rates in 1980. Prior to this, the South African Reserve Bank was responsible for determining maximum and minimum deposit and lending rates. The justification for interest rate liberalization was to allow banks greater flexibility and to encourage competition. In contrast to the expectations of the monetary authorities, interest rates remained negative in real terms after liberalization and only remained fairly and steadily positive over and above inflation, except in 1992.

The majority of the liberalization process had emerged in South Africa after the lifting of international sanctions. By the end of 1992, most of the economic sanctions on South Africa were lifted. The liberalization of the stock market which entails the removal of controls in the stock market emerged in the South African economy after the lifting on international sanctions. The liberalization of the stock market is argued to lower the cost of equity capital by [7], [51]. The plausible explanation for this finding is provided by [28], who argues that the liberalization of the stock market provides a basis for risk sharing between domestic and foreign agents.

A harmonized liberalization of the stock markets, capital account, banking sector and interest rate constitutes financial liberalization. Starting from March 1995, several exchange control relaxations were effected. In March of 1997 and 1998 further controls were eased which permitted South African corporations to repatriate more funds for investment, and at the same time, domestic firms were permitted to borrow from abroad, the limit in foreign investment was later increased in March 2001. The South African interest rates were previously controlled between 1960s and 1970s like other financial prices. In 1970, the upper limits imposed on deposit rates payable on banks and deposits of building societies were dropped and the government later decided to subsidize certain interest rates. In 1972 these controls were reintroduced, however in 1980 South Africa liberalized both its lending and deposit rates to allow banks greater flexibility and to encourage competition.

Literature Review on Credit Rationing

Credit rationing theories are based on informational asymmetries between lenders and borrowers and transaction costs of information search and monitoring. The availability of information in the decision to lend is important because it enables the bank to evaluate the risk-return profile of the loan application and hence set the level and terms of credit to be extended to the borrower. However, according to [26] full information about the borrower's project may not always be available. This leads to a situation of information asymmetry, which occurs when one party to the lending transaction has more and/or better information than the other. Information asymmetry between SME borrowers and the banks is reflected in inability of the majority SMEs to provide up to date reliable financial information and realistic business plans. This increases the cost of lending that banks incur while dealing

with these SMEs. Also limits the ability of banks to assess the credit worthiness of the individual SME borrowers. Where information asymmetry exists, literature shows that it may lead to excess demand for credit in traditional credit markets (Jaffe and Russell 1976, Stiglitz Weiss 1981 and Williamson 1986). This arises due to credit rationing which results from risks perceived by lenders because of information insufficiency in evaluating loan applications. The risks that banks face when they lack necessary information to distinguish between good and bad borrowers are moral hazard and adverse selection[32];[51]; monitoring costs and transaction costs in issuing bank debt, such as costs of application, screening costs, bankruptcy costs.[56]. Contemporary contract theory argues that banks are not interested in granting credit to SMEs because it is particularly difficult to overcome information asymmetries and resulting screening, monitoring, and enforcement problems: clients are poor, have few assets to collateralise, they don't keep records and those who keep the quality of information is unreliable, and give rise to high transaction costs[51].

Banks could use interest to equilibrate the market and allocate credit. However, bank cannot increase interest rate above certain level. An increase in the interest rate above certain level may worsen the quality of loan in a way that is unacceptable to the bank. The impossibility to use interest rates as screening technology entices lenders to use non-interest screening devices base on the characteristics of entrepreneur and attribute of enterprises (Lehman and Neurberger, 2001). Statistical model of discrimination Arrow (1973);Bekaert and Harvey (2003), as cited by Kitindi *et al.*2007) suggests that, as long as borrowers' demographic characteristics are correlated with their creditworthiness, lenders may use the borrower characteristics as a proxy for the risk factor associated with loans. This is the case when lenders cannot observe the risk factors or do not collect relevant information due to the cost involved. The probability that the constraint is binding for a given firm will decrease with increasing availability of signalling and/or screening devices to overcome existing information asymmetries. Apart from a sufficient performance and satisfactory risk exposition of the credit funded project, availability of collateral, individual characteristics and skills of the borrower, relationship lending and borrower reputation are assumed to be among the most important devices to avoid credit. The next section provides a critical discussion of the literature on business and entrepreneur characteristics, relationship lending, collateral, loan maturity and its account of credit rationing.

A. **Enterprises Characteristics and Credit Rationing**

- Degree of information asymmetry depends on firm characteristics such as firm size, age and industry. Size and age of the firm provide a signal concerning credit risk. Firm age is usually viewed as an indicator of firm's quality, since longevity may contain a signal for survival ability and quality of management, as well as, the accumulation of reputational capital[21]. Information asymmetric is likely to be acute for young

and newly established firm, because creditors have not had enough time to monitor such firms. Furthermore, such firms have not had enough time to build long-term relationship to suppliers of finance.[42] argues that lack of reputation constraints younger firms from borrowing as they grow information asymmetric decrease.

- Time series study of [12] show that firms in the age of class of 2-6 years carry highest bankruptcy risk, whereas long success cannot be expected before seven years after birth.[22][11] argues that because of the liabilities associated with newness the bank may view younger firm as riskier than older firms. A number of explanations have been proposed for small firm disadvantages in loan markets. For instance, their higher relative probability of failure[33], fixed costs in assessing application for finance[53], and proportionately higher monitoring costs[11]. In addition, smaller firms may have lower collateral relative to their liabilities than larger ones, and unit bankruptcy costs are likely to decrease with size[2].
- According to [35]creditors, banks and other lenders use business information provided by firms to analyse their present performance and predict future performance. Financial information acts as indicator of borrower's future prospects and ability to service a loan. Availability, quality and reliability of business information can reduce information problems between bank and borrowers, hence alleviate credit rationing. Therefore, generation and effective use of financial information is essential in accessing funds from external sources. Information asymmetries, where capital providers have less information on the financial circumstances and prospects of small firms than owner-/managers, are regarded as the root of small business finance problems[8]. Compared with their larger counterparts SMEs face greater constraints in accessing capital because they lack adequate financial information to enable outside investors to assess their performance[15]. Unreliable financial plan and records and poor record keeping have been also mentioned to be among of the major causes of limited access to credit by SMEs in South Africa [54]. Moreover,[45]argued that SMEs operators lack the appreciation of the need for keeping business and financial records or asking professional accountants to do so. Those who keep records have two set of accounts, one of which is informal and the other one which is formal. This means they cannot demonstrate a track record of good performance and affect the quality of financial reports of SMEs. However, to date there is a lack of empirical evidence concerning accounting practices and access to external funds.[4] and[5]investigate whether the presence of hard information is relevant or not, in granting credit to SMEs.[6] only indicate whether a firm has "documentation or accounting records on which to answer survey questions. All the aforementioned studies didn't consider the practical issues in the

preparation of those accounts. They ignore the reliability and accuracy of source of information used to prepare those financial statements. They did not take into consideration accounting practices of the firm, they only base on lastly prepared statements rather than reliability and accuracy of source of the data

- [55] investigated barriers to raising bank finance faced by UK small and medium-sized enterprises (SMEs), specifically the impact of personal characteristics (ethnicity, gender and education). They found that though statistically insignificant, women respondents found it easier to raise finance than men. The survey confirmed that – and this finding was statistically significant – ethnic minority businesses, particularly black ownermanagers, had the greatest problem in raising finance and hence relied upon “bootstrapping” as a financing strategy. Likewise[54] examined whether financial institutions discriminate against entrepreneurs on the basis of gender. They found some evidence that compared to male managed counterparts; female-managed firms are less likely to obtain a bank loan. In addition, analysis suggested that female entrepreneurs are charged higher interest rates when loan applications are approved.[43] found that in the United States of America women owned firms have higher loan denial rates and lower application rates than their male counterparts.[9]found statistically significant evidence of substantial discrimination in loan approval against black owned and Hispanic-owned businesses. They also found some hints that this discrimination takes the form of statistical discrimination, driven by lenders’ stereotypes about the ability of blackand Hispanic-owned businesses to succeed under some circumstances.[27],[22] Analysed the influence of business and entrepreneur characteristics on financial constraint perceive by SMEs in UK. He found that entrepreneurs’ characteristics such as education, experience and personal wealth have strong impact on the severity of financial problem faced by SMEs.[16]investigated the role of race, ethnicity, personal wealth and gender in US, they found that ethnicity, and gender and personal wealth are associated with probability of loan denial.[10]use several sample splits and compare regression results for groups of firms that differ in the extent to which personal wealth should influence loan decisions, they found no statistically significant effect of gender.[17]and[10]found that African-American owners and females who applied for credit within three years of the survey were more likely than others to be denied credit.[45]found that in Ontario, youth entrepreneurs have negative experience with the bank due to lack of business experience and track record.
- [45]argues that limited managerial capacity demonstrated by lack of formal planning, appraisal and reporting system and structures constraint access to finance by SMEs. Few SMEs owners-managers uses professionals to write business plans, but some of

these may not have internalized the vision, objectives and strategies stated sufficiently to own them and hence discuss them with bankers.[47]has supported this by arguing that SMEs are considered to be at a greater risk of failure, partially because company director may have less collective management experience or may have less business expertise than large.

- Borrower understanding of bank requirements for obtaining credit is essential in accessing bank credit. This is because it will ensure delivery of information to the bank. Quality and quantity of information available to the bank is essential in accessing credit. The flow of information implies that both parties will have better understanding of each other[23]. To ensure adequate flow of information is essential for borrowers to understand information needed by banks and importance of that information in accessing bank credit.[32]noted that accurate credit information can have greater predictive power for the performance of firms than the data contained in financial statements. Therefore borrower understanding of bank procedures and information needed by banks to acquire credit may have an impact on credit rationing. However, no study has been conducted to examine whether limited access to credit by SMEs is influenced by lack of understanding of bank requirements for obtaining credit.

B. Research Methodology

A structured questionnaire survey was used to collect data. [19]describes a survey as a quantitative or numeric description of some fraction of the population – the sample. Which enables researchers to generalize their findings from a sample of respondents to a population within the limitations of the sampling method. Convenience sampling was used which consisted of contractors registered with the CIDB. A total of 179 SMEs completed the questionnaire survey. Content validity was conducted on the questionnaire using pilot study administered to 30 construction SMEs.

SPSS version 22 was used to perform the binary logistic regression analysis. A binary logistic regression model with a dichotomous dependent variable of Yes or No was modelled. Yes response was defined as having accessed full credit and No accessed part of the credit. The dependent variable was coded as 1 and 0, for “Yes” and “No” respectively. The independent variables of the logistic regression model were also coded. They were the demographic and socio-economic characteristics of the SMEs: *gender* if male 1 and female 2; *age group*, 30 years and below 1, 31 years to 39 years 2, 40 years to 49 years 3 and 50 years and above 4; *current position*, director 1, owner 2, manager 3 and manager/owner 4; *ownership*, sole proprietorship 1, partnership 2, limited partnership 3, limited Liability company 4, corporation (for-profit) 5; *tax number* No, 0 and Yes, 1; *location of business*, city of Johannesburg Metropolitan Municipality 1, city of Tshwane Metropolitan Municipality 2, Ekurhuleni

Metropolitan Municipality 4, West Rand District Municipality 4; collateral No, 0 and Yes, 1

Logistic regression is recommended over linear regression when modeling dichotomous responses and allows the researcher to estimate probabilities of the response occurring (Hosmer and Lemeshow, 2004). The logistic regression equation takes the following form

$$\ln \left(\frac{p}{1-p} \right) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_k x_k \dots \dots \dots (1.1)$$

Where p is the estimated probability of passing, and x1, x2,, xk are independent variables.

The estimated probability of the response occurring or passing (p) divided by the probability of it not occurring or not passing (1-p) is called the odds ratio. Maximum likelihood method is used to estimate the odds ratios of the model. Values of odds ratios higher than 1 indicate positive association between the variables, odds ratios equal to 1 indicate no association, while odds ratios lower than 1 indicate negative association between each independent variable and the dependent variable of the model.

Furthermore, in order for an independent variable to be a predictor of the dependent variable the p-value should be less than 0.05 at 95% confidence, which connotes its significance in the model. In achieving a fitting model the Hosmer-Lemeshow goodness of fit test should be significant i.e. the value should be greater than 0.05[48].

The factors preventing SMEs from accessing credit were measured using Likert scale of 1 to 5. 1= Strongly disagree (SD), 2= Disagree (D), 3= Neutral (N), 4 = Agree (A), 5= Strongly agree (SA). The Likert-scale questions are discussed based on their mean score in the interval scale. The difference between the upper and lower ends of the used scale is 4.0 since there are five points. Each range can be equated to 0.80 because the extent of the range is determined by a division between 4.0 and 5.0 (4/5). However, in the current study the intervals are as stated: > 4.21 ≤ 5.00 Strongly agree; > 3.41 ≤ 4.20 Agree; > 2.61 ≤ 3.40 Neutral; > 1.81 ≤ 2.60 Disagree; > 1.00 ≤ 1.80 Strongly disagree.

Table 4.1 indicates that male respondents were the majority than female respondents, at 63% to 37% respectively. Majority i.e. 51% of the respondents were in the age group between 40-49 years old. Furthermore, 82% of the respondents were owners of the organizations surveyed. Majority i.e. 72% of the respondents had business experience of between 6 to 10 years. 98% of the SMEs are sole. Furthermore, majority i.e. 41% of the SMEs were located in the city of Johannesburg metropolitan.

Table 4.1 Profile of respondents and organization

<i>Gender</i>	<i>Frequency</i>	<i>Percentage</i>
Male	112	63%
Female	67	37%

<i>Age group</i>	<i>Frequency</i>	<i>Percentage</i>
30 years and below	2	1%
31-39 years	49	27%
40-49 years	92	51%
50 years and above	36	20%
<i>Current position</i>	<i>Frequency</i>	<i>Percentage</i>
Director	29	16%
Owner	146	82%
Manager	3	2%
Manager/owner	1	1%

Continued Table 4.1 Profile of respondents and organization

<i>Experience of respondent</i>	<i>Frequency</i>	<i>Percentage</i>
1-5 years	15	8%
6-10 years	130	72%
11-15 years	33	18%
16-20 years	1	1%
<i>Ownership</i>	<i>Frequency</i>	<i>Percentage</i>
Sole proprietorship	175	98%
Partnership	2	1%
Limited partnership	1	1%
Limited liability company (LLC)	1	1%
<i>Location of company</i>	<i>Frequency</i>	<i>Percentage</i>
City of Johannesburg metropolitan	74	41%
City of Tshwane metropolitan	42	24%
Ekurhuleni metropolitan	34	19%
West Rand district municipality	29	16%

Table 4.2 indicates that the SMEs respondents strongly agreed that lack of collateral, lack of cashflow statement and owners equity were hindering SMEs from accessing credit from financial institutions. The means were in the band of 4.21 to 5.00. The sector of the business, lengthy and vigorous procedure for credit application, high interest rates, location of the business were in the band of 3.61 to 4.20 suggesting that the respondents agreed that they contributed to their difficulty of obtaining credit. Furthermore, the SMEs respondents disagreed that lack of appropriate education and training, and lack of managerial ability were hindering them from accessing credit. These two constraints were in the band of 1.81 to 2.60

Table 4.2 Constraints in obtaining credit

<i>Constraints of credit accessibility</i>	<i>Mean</i>	<i>Stdev.</i>	<i>Rank</i>
Lack of collateral	4.69	0.58	1
Lack of cash flow statement	4.51	0.98	2
Owner's equity	4.39	1.01	3
Sector of the business	4.14	1.21	4
Lengthy & Vigorous procedure for credit application	4.13	1.37	5
High Interest rates	3.81	1.51	6
Location of the business	3.76	1.27	7
Lack of good reference on integrity	3.03	1.66	8
Lack of awareness of existing credit schemes	2.97	1.71	9
A general lack of experience and exposure on construction project	2.75	1.73	10
Lack of information on the cost obtaining such service	2.72	1.74	11
Lack of appropriate education & Training	2.21	1.68	12
Lack of managerial ability	2.09	1.59	13

The result in Table 4.3 suggest that of the 179 respondents one respondent did not get credit at all. Therefore, 21.91% i.e. 39 of the respondents received part of the credit they applied for and 78.09% i.e. 139 of the respondents obtained the full credit. It can be indicated that some of the SMEs did not receive the full credit they applied from the financial institutions. This is imperative to this study as there is lack of studies that have determined the predictors that influence full credit accessibility and partial credit accessibility globally.

Table 4.3 Full or partial credit accessed

<i>Credit accessed</i>	<i>Respondents</i>	<i>Percentage</i>
Accessed partial credit	39	21.91%
Accessed full credit	139	78.09%
Total	178	100.00%

The results in Table 4.4 indicates that of the seven demographic and socio-economic independent variables modelled to predict full credit accessibility. Age group 40-49 years were likely to receive full credit than applicants who were in the age group 30 years and below. This finding suggests that financial institutions might deem applicants who are 30 years and young as being risky clients.

Table 4.4 Predictors of accessing full credit

Table 4.5 shows the composition of the sample by gender and rationing status. The table shows that the share of male-owned businesses constitutes 57 (21 percent) of all firms in the sample while male owned business constitute 214 firms (79 percent). These figures are broadly consistent with data on female entrepreneurial activity from other sources. For

<i>Variable</i>	<i>Exp. (B) Odds ratio</i>	<i>95% C.I. for EXP (B) Lower</i>	<i>95% C.I. for EXP (B) Upper</i>	<i>P-value</i>
Gender (1)	2.102	0.929	4.757	0.075
Age group				0.133
31-40 years (1)	135383335	0.000	.	0.999
	.572			
40- 49 years (2)	0.269	0.079	0.916	0.036
50 years and over (3)	0.668	0.215	2.074	0.485
Current position				0.040
Owner (1)	0.000	0.000	.	1.000
Manager (2)	0.000	0.000	.	1.000
Manager/owner (3)	2.191	0.000	.	1.000
Ownership				1.000
Partnership (1)	0.000	0.000	.	1.000
Limited partnership (2)	1.357	0.000	.	1.000
Limited Liability company (LLC) (3)	1.274	0.000	.	1.000
Tax number (1)	0.050	0.004	0.564	0.015
Location (municipality)				0.085
City of Tshwane Metropolitan Municipality (1)	0.785	0.218	2.828	0.711
Ekurhuleni Metropolitan Municipality (2)	0.246	0.063	0.958	0.043
West Rand District Municipality (3)	0.707	0.175	2.863	0.627
	347074722			0.999
	804677320			
	0.000			

example, data collected in the U.S., the share of female-owned businesses varies between 20 percent among white applicants and 29 percent among Hispanic applicants [17]. [16] show that there are more discouraged borrower among females SMEs than male SMEs which could reduce the share of female applicants. [43] shows that in the US women owned firms have lower application rates than their male counterparts. [55] using data from Indonesian SMEs, show that the representation of women entrepreneurs in SMEs is relatively low suggesting that entrepreneurship is still male dominated. In South Africa, interview with SMEs manager from three banks reveal that, SME-women borrowers often lack ability to meet bank-lending criteria. Most SME women borrowers, do not own land or other assets that can be used for collateral. Cultural barriers compound the problem of getting collateral by the women borrowers. Women generally do not own land and this makes them depend on their husbands who decide whether their wives should carry out business or not and hence provide collateral for it. In the entire sample the result indicate that male enterprises are more rationed than their female counterparts: 133 (48.08 percent) male firms versus 40 (14.76 percent) firms for partially rationed applicant. However, when we take into consideration proportion of male and female applicants in the entire sample the result reveal that female applicants are more rationed than male applicants: 40 (70.18 percent) female owned firms versus 133 (62.15 percent) male owned firms. However, when we consider the rejected applicants only, male firms are more rejected than female applicants 30 (14.02 percent) male firms versus 6 (10.53 percent). This result is inconsistency with previous studies. For example [43] shows that in the US women owned firms

have higher loan denial rates than their male counterparts. Further [43]find that female-managed firms are less likely to obtain a bank loan compared to male firms. However; the reasons for this difference is a fact that, a direct comparison of rationing status by gender condition on applying for loan may be misleading. Based on the fact that most female owned SMEs are discouraged from applying bank credit, the pool of female applicants is likely to consist of women whose businesses have superior characteristics of performance and creditworthiness. This would underestimate the extent of credit rationing.

Table 4.5 Cross tabulation of gender and rationing

<i>Description</i>	<i>Frequency</i>	<i>Percentage</i>
Male Not rationed	92	51%
Male Partially rationed	19	10%
Female Not rationed	47	25%
Female Partially rationed	20	9.7%
Total response	178	80%
Age group	Frequency	Percentage
30 years and below	2	1%
31-39 years	49	27%
40-49 years	92	51%
50 years and above	36	20%
Current position	Frequency	Percentage
Director	29	16%
Owner	146	82%
Manager	3	2%
Manager/owner	1	1%

D Conclusions and Recommendation

According to [52] and [58] developed the main theoretical contributions about credit rationing and suggested that information asymmetry and high transaction cost are the main reasons for firms being credit rationed. This paper studied the phenomenon of credit rationing in South Africa bank loan market within construction industry and financial institutions in South Africa. Measures of rationing comes directly from firms responses to the survey, this allows a direct identification of rationing status, credit rationed firms and permitting an explicit connection between rationing and potential borrower profile. The results shows that 63.8 percent firms were rationed mostly small and young firms, female owned firms and firms operating in construction sector. The study also revealed that long term loan is more rationed compared to short term loan. Furthermore, findings from both SMEs owner and credit officers revealed that credit rationing in South Africa appears to be driven primarily by business and entrepreneur characteristics - managerial competence of owner, quality of business information and poor quality accounting practices, borrower understanding of banks requirements for obtaining credit, inadequacy of collateral, poor relationship with banks and lack of credit history- and supply side conditions - inflexible loan eligibility criteria, cumbersome analysis of loan applications, unfavourable credit terms and conditions such as higher interest rate and

commissions charged by banks and excessive collateral requirements in comparison to loan value, higher monitoring costs.

To overcome credit rationing and ensure construction SMEs access to adequate bank credit the following key challenges facing construction SMEs, commercial banks, and the policy makers need to be addressed. First, small firms' access to loans from commercial bank is constrained by opacity of their operations and inadequate collateral. Since their information is limited to creditors, those young firms need to be able to demonstrate convincing and realistic business plans showing potential future returns and viability. It is also important to be able to show a consistent cash flow with an up-to-standard accounting book and develop a culture of transparency and accountability. Further, *since most rationed SMEs lack appropriate collateral they need to build relationships with their banks.* SMEs should also understand bank requirements for obtaining credit. Likewise banks should announce their lending policies to increase SMEs awareness of bank procedures. Second, banks should design credit procedures that address peculiar conditions of SMEs. Lending practice of commercial banks is still largely based on excessive collateral requirements. However, due to higher opacity of small firms operations and lack of collateral, relationship-based lending where credit officers are geographically in the proximity of borrowers and can monitor their business conditions closely will reduce information asymmetry between banks and the borrowers. Therefore relationship lending is vital for young firms with a good business plan (most likely with limited collateral) to gain credit access. Thirdly, government policies should aim to reduce the information asymmetry problem by formulating rules on financial reporting and disclosure and the use of appropriate accounting and auditing standards. These rules will ease screening and monitoring by banks. When firms become more transparent and the accounting information becomes more reliable and meaningful, banks will be able to adopt lending technologies based on hard information. To the extent that weak transparency is a fundamental feature of small firms, enhancing the availability of information through credit registers and other systems of notice will decrease the costs of screening loan applications. The experiences that were explored in this study concerned borrowers who had actually applied for bank credit. Further research is needed to study the experiences of those SME borrowers who never approach the bank and therefore only remain potential bank clients (discouraged borrowers). There is also need to intensify research into the aspects that were brought in the study. This should more specifically focus on examining the applicability of credit rationing and supply determinants identified in the study to specific sectors of the society like youth and women.

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References

- [1] Agumba, J.N., Adegoke, I.O. and Otieno, F.A.O., 2005, Evaluating Project Management Techniques in Small and Medium Enterprises Delivering Infrastructure in South Africa Construction Industry. *Proceedings of 3rd Postgraduate Conference 2005, Construction Industry Development*, Eskom Convention Centres, Midrand, Johannesburg, South Africa, 9th-11th October, 52-65.
- [2] Audretsch D B, Elston J (2002). Does firm size matter? Evidence on the impact of liquidity constraints on firm investment behaviour in Germany. *Int J Ind Organ* 20(1): 1-17.
- [3] Balkenhol B, Evans-Klock C (2002). Private equity and capitalization of SMMEs in South Africa: Quo vadis? [online] Available: <http://www.ilo.org/public/english/employment/finance/download/d/wp.34.pdf>. [Accessed: 5 June 2016].
- [4] Berger, A., Black, L., 2011. Bank size, lending technologies, and small business finance. *Journal of Banking and Finance* 35, 724–735
- [5] Beck, T. Demirguc-Kunt, A and Peria M.S.M, (2008), “Bank Financing for SMEs around the World: Drivers, Obstacles, Business Models and Lending Practices.” Policy Research Working Paper, 4785.
- [6] Beck T (2007). Financing constraints of SMEs in developing countries: Evidence, determinants and solutions. *J. Int. Money Finance*, 31(2): 401-441.
- [7] Bekaert, G., and Harvey, C.R. (2003). Emerging markets finance. *Journal of Empirical Finance* 10:3 – 55.
- [8] Binks, C. and Reed, G. (1992), Information asymmetries and the provision of finance to small Firms. *International small business journal* 11 (1): 35-46. 16 452-76. 31
- [9] Blanchard, L., Zhao, B., Yinger, J., 2008. Do credit market barriers exist for minority and women entrepreneurs? *Journal of Urban Economics* 62 (2), 467–497.
- [10] Blanchflower D.G. , Levine P.B. , Zimmerman D.J. (2003). Discrimination in the small business credit market. *Review of Economics and Statistics* 85 930–943.
- [11] Boocock, G. and M. Woods, 1997, The evaluation criteria used by venture capitalists: evidence from a UK venture fund, *International Small Business Journal* 16, 36–57.
- [12] Brüderl, J., Preisendörfer, P., 1998. Network support and the success of newly founded business. *Small Business Economics* 10, 213–225.
- [13] Banerjee, Sanjibani (2008), “Credit Rationing with Neo-Classical Banks and Production Firms” <http://artsci.wustl.edu/~econgr/gradconference/08/SanjibaniBanerjee.pdf> Bank of Botswana (2001) Annual Report
- [14] Bureau of African Affairs. (2000). Country information. US State Department, April. (2015).
- [15] Cassar and Holmes (2003). Capital structure and financing of SMEs: Australian evidence. *Accounting and finance*, 43 (2) 123-147.
- [16] Cavalluzzo, K., Cavalluzzo, L. and Wolken, J. (2005). Small business loan turn downs, personal wealth and discrimination, *Journal of Business* 78 (6): 2153–2177.
- [17] Cavalluzzo, K.S., Cavalluzzo, L.C., Wolken, J.D., 2002. Competition, small business finance, and discrimination: evidence from a new survey. *Journal of Business* 75, 641–680.
- [18] Construction Industry Development Board, 2008, Construction Health and Safety in South Africa, Status and Recommendations. Pretoria, South Africa.
- [19] Creswell, J.W., 1994, Research design, qualitative and quantitative approaches. London: Sage.
- [20] Department of Public Works, 1999, White paper on Creating an Enabling Environment for Reconstruction Growth and Development in the Construction Industry, Government Printers, Republic of South Africa. <http://www.info.gov.za/whitepaper/1999/environment.htm> last accessed on the 01/ March 2016.
- [21] Diamond, D.W., (1991). Monitoring and reputation: The choice between bank loans and directly placed debt. *Journal of Political Economy* 99, 689-721.
- [22] Dunkelberg, W., 1998, Credit, banks and small business in America, *Journal of Banking and Finance* 22.
- [23] Ennew C and Bink M (1997). Relationships between UK banks and their small business customers. *Small business economics*, 9 167-178
- [24] Fatoki, O., 2014, Factors Influencing the Financing of Business Start-ups by Commercial Banks in South Africa, *Mediterranean Journal of Social Sciences*, 5, 20, 94-100.
- [25] FinMark Trust (2006). Fin scope small business survey report. [Online]. Available: <http://www.finmarktrust.org.za> [Accessed: 18 May 2016].
- [26] Grimsholm, E., and Poblete, L., 2011, Internal and External factors hampering SME growth-A qualitative case study of SMEs in Thailand-unpublished masters’ thesis, Gotland University
- [27] Han L (2008). Bricks Vs Clicks: Entrepreneurial online banking behaviour and relationship banking. *International Journal of Entrepreneurial Behaviours & Research*, 14 (1) 17-60.
- [28] Henry, P.B., (2000). Stock market liberalization, economic reform and emerging market equity prices. *Journal of Finance* 55 (2), 529– 564.
- [29] Herrington M, Kew J, Kew P (2009). Global Entrepreneurship Monitor, South African report. [Online]. Available: <http://www.gbs.nct.ac.za/gbswebb/userfiles/gemsouthafrica2009pdf> [Accessed 15 March 2016].
- [30] Hoff, K. and J.E. Stiglitz (1990), “Imperfect Information and Rural Credit Markets –Puzzles and Policy Perspectives”, *The World Bank Economic Review*, 4 (3).
- [31] Jaffee, D, & Russell, T. (1976). Imperfect information, uncertainty and credit rationing. *Quarterly Journal of Economics*, 90, 651–666.
- [32] Jappelli, T., and M. Pagano (2001). Information Sharing in Credit Markets: Theory and Evidence.” In: M. Pagano, editor. *Defusing Default: Incentives and Institutions*. Baltimore and Washington, United States: Johns Hopkins University Press/Inter- American Development Bank.
- [33] Jensen, J. B. and R. H. McGuckin, 1997, Firm Performance and Evolution: Empirical Regularities in the US Microdata, *Industrial and Corporate Change* 6, 25–47.
- [34] Kauffman Foundation (2007). The capital structure decisions of new. Firms. [online]. Available: <http://www.kauffman.org> [Accessed: 20 March 2016].
- [35] Kitindi, E.G., Magembe, B.A.S., & Sethibe, A. (2007). Lending decision making and financial information: the usefulness of corporate annual reports to lender in Botswana. *International Journal of Applied Economics and Finance*, 1(2), 55-60.
- [37] National Small Business Act. 2004, Number 29 of 2004 Republic of South Africa. Available from: <http://www.info.gov.za/view/DownloadFileAction?id=67967> last accessed 18/04/2016.
- [38] Lehmann, E. and Neuberger, D. (2001). Do lending relationships matter? Evidence from bank survey data in Germany. *Journal of Economic Behaviours and Organization* 45: 339-359
- [39] Lapar, M.L.A. and D.H. Graham (1988), “Credit Rationing Under a Deregulated Financial System” Working Paper Series No. 88 – 19, <http://www3.pids.gov.ph/ris/wp/pidswp8819.pdf>
- [40] Maas G, Herrington M (2006). Global entrepreneurship monitor South Africa report. [online]. Available: <http://www.gemconsortium.org/document.aspx?id756> [Accessed: 6 June 2016].
- [41] Martin, I. 2010, Challenges faced by South African emerging contractors-review and update. *Proceedings of the Construction, Building and Real Estate Research conference of Royal Institute of Chartered Surveyors*, Dauphine Universite, Paris 2nd-3rd September 2015, France
- [42] Martinelli, C. (1997). Small firms, borrowing constraints, and reputation. *Journal of Economic Behaviours and Organization* 33 91-105.
- [43] Mijid, N. (2009). Gender, race and credit rationing of small businesses evidence from the 2003 survey of small business finance. [Online] Available: <http://www.kauffman.org/research-and-policy/kd/fp/fellows.aspx> (June 16, 2016).
- [44] Morewagae, B.S., M. Seemule and H. Rempel (1995), “Access to Credit for Non-formal Microenterprises in Botswana” *The Journal of Development Studies*, 31(3): 481-504.
- [45] Olomi R, (2009). African entrepreneurship and small business development. Otme Company Ltd. Dar es Salaam.
- [46] Okurut, F.N, A. Schoombee and S. Van der Berg (2005), “Credit Demand and Credit Rationing in the Informal Financial Sector in Uganda” *South African Journal of Economics*, 73(3): 481 – 497.

[47] Organization for Economic Cooperation and Development (OECD, 2006), The SMEs Financing Gap Volume 1: Theory and Evidence. Retrieved from:

<http://ec.europa.eu/enterprise/newsroom/cf/document.cfm?action=display&doc-id=624&userservice> last accessed on the 11/03/2016

[48] Pallant, J. 2013, SPSS, Survival Manual: A step-by-step guide to data analysis using IBM, SPSS, 5th Edition, Allen & Unwin, Sydney, Melbourne, Auckland, London.

[49] Statistics South Africa (2009). Quarterly labour force survey.[online]. Available: http://www.statssa.gov.za/publication/find_publication.asp [Accessed: 18 April 2016].

[50] Statistics Canada (2007). SME financing data initiative: young entrepreneurs. [Online]. Available: www.sme.fdi.gc.ca/cic/site/sme/fdi.prf-pme.nsf/eng/001371.html [Accessed: 17 May 2016]

[51] Stiglitz, J. and Weiss, A. (1981). Credit rationing in markets with imperfect information. *American Economic Review* 71: 393-410.

[52] Stiglitz, J.E. and A. Weiss (1981), "Credit Rationing in Markets with Imperfect Information" *American Economic Review*, 71(3): 393 - 410.

Stulz, R. M., (1990). Managerial discretion and optimal financing policies, *Journal of Financial Economics* 26, 3-28

[53] Symeonidis G., 1996. Innovation, Firm Size and Market Structure: Schumpeterian Hypotheses and Some New Themes, Economics Dept. WP 161, OECD, Paris.

[54] Temu, S. (1998). The impact of financial institutions reforms on small and micro-enterprises in Tanzania. *Business management review* 5(2): 56-78

[55] Tulus Tahi Hamonangan Tambunan (2011). Development of small and medium enterprises in a developing country. *Journal of Enterprising Communities* 5 68-82.

[56] Williamson, S. (1986). Costly monitoring, financial intermediation, and equilibrium credit rationing. *Quarterly Journal of Economics*, 102 135-145.

[57] Williamson, J., and Mohar, M., (1998). A survey of Financial Liberalization. Essays in International Finance, Princeton University, No. 211.

[58] Williamson, S. (1987). Costly monitoring, loan contracts, and equilibrium credit rationing. *Journal of Monetary Economics*, 18, 159-179.



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