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# An empirical investigation of Ivorian SMEs access to bank finance: constraining factors at demand-level.

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# **An Empirical Investigation of Ivorian SMEs Access to Bank Finance: Constraining Factors at Demand-Level**

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## **Abstract**

This paper investigates the issue of inadequate funding among SMEs operating in Cote D'Ivoire. Data was collected from SMEs operators in both urban and rural areas. The research applies probability sampling, cross-tabulation and correspondence analysis techniques. The paper finds information asymmetry and inadequate collateral as two major constraints that limit the flow of credit from banks to SMEs. The findings reveal that this phenomenon is more recurrent in the micro-enterprises compared to small or medium enterprises.

**JEL classification numbers:** P42, P45, L53.

**Keywords:** Micro-Enterprises, Small-Enterprises, Medium-Enterprises, Access to finance, SMEs.

## **1 Introduction**

The economic contribution of small and medium sized enterprises (SMEs) is vital for both advanced and developing countries (Collin and Mathew, 2010, Oman and Fraser, 2010). Data collected from previous studies reveal that the sector employs more than 60% of modern employees (Matlay and Westhead, 2005, Ayyagari, et al., 2006). In the case of Cote d'Ivoire, SMEs mainly dominate the industry sector with 98% of the domestic enterprises, contribute to 18% of the total GDP and offer almost 20% of modern employment (PND, 2011). The magnitude of their involvement in the economy and their role in the post-political crisis recovery period led the Ivorian government to enhance funding provisions including improved policies and reforms required by the SMEs (BOAD and AFD, 2011, MEMI, 2012). Some of the initiatives taken aimed to encourage

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local privatisation, frame policies to ameliorate the SMEs efficiency, create a database in collaboration with economic operators, promote national and international financial intermediaries, and establish an institutional and regulating board for SME financing (MEMI, 2012). These initiatives had positive impact which is reflected in the increase of financial institutes. This can be noted in table 1 where year of establishment of the financial institutes are also provided.

Table 1: List of Banks and Year of Establishments in Cote D'Ivoire

No	NAME	YEAR ESTB.
1	Access Bank	2008
2	Bank Of Africa-Cote D'ivoire	1996
3	Banque Atlantique-Cote D'ivoire	1978
4	Banque De L'habitat-Cote D'ivoire	1994
5	Banque Internationale Pour Le Commerce Et L'industrie	1962
6	Banque Nationale D'investissement	2004
7	Banque Pour Le Financement De L'agriculture	NA
8	Banque Regionale De La Solidarite	2005
9	Banque Sahelo-Saherienne Pour L'investissement Et Le Commerce	2011
10	Bgfibank-Cote D'ivoire	2012
11	Biao-Cote D'ivoire	1906
12	Bridge Bank Group -Cote D'ivoire	2004
13	Caisse Nationale Des Caisses D'epargne De La Cote D'ivoire	NA
14	Citibank-Cote D'ivoire	2003
15	Cofipa Investment Bank	1978
16	Coris Bank International	2008
17	Diamond Bank Benin- Cote D'ivoire	2007
18	Ecobank- Cote D'ivoire	1989
19	Guaranty Trust Bank- Cote D'ivoire	2011
20	Societe Generale De Banques En Cote D'ivoire	1963
21	Societe Ivoirienne De Banque	1962
22	Standard Chartered Bank Cote D'ivoire	2000
23	United Bank For Africa	2006
24	Versus Bank S.A.	2003
25	Societe Africaine De Credit Automobile (Alios Finance)	1956
26	Fonds De Garanties Des Cooperatives Café-Cacao	2001
27	Credit Solidaire	2004

Source: BCEAO (2013) Compiled by authors

We can note significant increase in the number of financial institutes over the years. However, access to finance has remained a problem. Table 2 shows the amount of credit allocated which has decreased considerably (-34.1%), adversely affecting SMEs access to finance.

Table 2: Principal Indicators and Statistics over 2005 – 2007, Cote D'Ivoire

No	PRINCIPAL INDICATORS	2005	2006	2007	VARIATIONS 2007-2006 (%)
1	No. of Institutions which transmitted their Financial Statements	32	35	42	20
2	Number of Branches	235	234	258	10.3
3	Deposits (Millions of FCFA)	58,959	71,440	80,086	12.1
4	Average amount of Deposits (FCFA)	88,880	103,085	69,140	-32.9
5	Equity Capital	- 5,129	- 7,188	- 5,868	-18.4
6	Average amount of allocated credit	435,069	251,202	165,602	-34.1
7	Credit outstanding (Millions of FCFA)	2,329	1,964	2,820	43.6
8	Gross Rate of Portfolio Degradation	10	7	9	24.3
9	Subsidies	197	215	331	54.0
10	Investments	11,874	15,205	18,749	23.3
11	Total Assets	107,566	71,212	75,108	5.5
12	Operating Products	15,123	10,716	13,369	24.8
13	Operating Charges	20,117	14,127	14,262	1.0
14	Net Income	- 4,993	- 3,411	- 893	-73.8
15	Employees Number	1,111	1,154	1,257	8.9

Source: BCEAO (2013)

Equally important is the lack of foreign participations in financial sectors. Table 3 shows that Cote d'Ivoire's economic freedom score is 54.1, which is 5.5 points below the world average in 2013, making the country the 126<sup>th</sup> most free economy worldwide IEF (2013). This rating reflects the poor protection of property rights, insecurity and widespread corruption which may have prevented foreign banks or even domestic banks from issuing adequate funding to SMEs in the country. The low number of foreign banks in the country has therefore further limited the flow of credit to SMEs.

Table 3: Indicators of Finance and Sources, Cote D'Ivoire

	All	Sub-Saharan Africa	Côte d'Ivoire
Percent of firms with a checking or savings account	87.7	86.6	67.4
Percent of firms with a bank loan/line of credit	35.5	22.0	11.5
Percent of firms using banks to finance investments	26.3	15.1	13.9
Proportion of investments financed internally (%)	69.4	79.3	89.0
Proportion of investments financed by banks (%)	16.6	9.9	3.7
Proportion of investments financed by supplier credit (%)	4.7	3.6	3.4
Proportion of investments financed by equity or stock sales (%)	4.6	2.0	0.0
Percent of firms using banks to finance working capital	29.5	19.9	8.3
Proportion of working capital financed by banks (%)	11.8	8.0	4.7
Proportion of working capital financed by supplier credit (%)	12.7	12.2	2.0
Percent of firms identifying access to finance as a major constraint	32.8	44.9	66.6

Source: Enterprise Surveys (2013), Compiled by authors (data is for the year 2009).

As can be seen from the table above, the percentage of bank finance is very low at 14% indicating the reason for a very high internal finance (89%), 10 points higher than sub-Saharan average. Not to mention the percentage of firms identifying access to finance as a major constraint is again substantially higher than that of average for developing countries in the sample and nearly 20 points higher than sub-Saharan average. This clearly indicates less than adequate supply of funds to firms by banks.

The remainder of the paper is organised as follows. Section II reviews the relevant literature of SMEs and their access to bank finance, followed by Section III which aligns the methodology used. Section IV discusses the findings and finally Section V concludes.

## **2 Literature Review**

Studies have highlighted several restrictions faced by firms while attempting to obtain finance from banks (Schiffer, et al., 2001, Woldie, et al., 2012, Beck, et al., 2008). Literature has also identified several key factors as a reason to this problem (see for instance, Woldie, et al., 2012, Isern, et al. 2009, BBA, 2002, Hussain, et al. 2006, Aryeetey, et al., 1994, Beck, et al., 2008, Deakins, et al. 2010) which are mainly divided into demand and supply sides.

Literature has focused on whether SMEs shortage of external finance arises from firm related factors, which literature relates as demand-side studies (Woldie, Mwita, & Saidimu, 2012), and from banks related factors, known in the literature as the supply-side studies (Deakins, et al., 2010; Iorpev, 2012). It is important to note that most of the literature focuses on the constraints encountered at the supply side and very few at the demand side. In Cote d'Ivoire, the subject has gained limited attention. This study is unique in that it explores the demand side factors for Cote D'Ivoire firms and then relates the findings to supply side studies.

Demand side issues involve factors such as inadequate flow of information, inadequacy of collateral, SMEs-banks relationships, business and entrepreneurial factors are considered as constraints. Among them, limited information is acknowledged as a foremost bottleneck in the banks' credit supply (Leland and Pyle, 1997). Therefore, the information asymmetry issue discussed by Stiglitz and Weiss (1981) is at the core of SMEs limitations when attempting to access credit from banks.

Apire (2002), Olomi (2009) and Griffiths (2002) confirmed that information asymmetry results mainly from poor or non-existent financial and accounting records. Ruffing (2002) suggested that the information asymmetry issue between bankers and SMEs borrowers limits the loan officers in the borrower's creditworthiness evaluation which hints to two major problems (Nott, 2003). First is an adverse selection when banks are unable to differentiate between genuine and bad borrowers and may choose the wrong borrowers or ignore both of them (Stiglitz and Weiss; 1981). Second, even if the loan is allocated, banks may not be able to assess whether the money lent is used in an appropriate manner as intended within the loan contract.

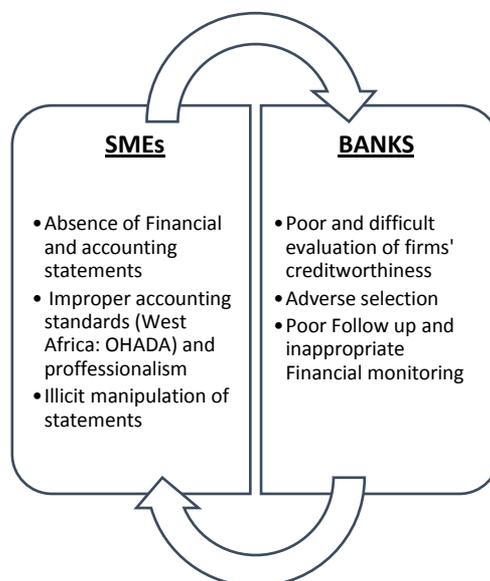
Demand side: SMEs- Supply side: Banks

Figure 1: Information Asymmetry: Causes and Effects

In the West African community, SMEs were found incapable of providing audited financial statements and accounting reports in accordance with the accounting standards prescribed by OHADA (Organisation for the Harmonization of Business Law in Africa) which is the accounting standards in West Africa. Even when they are provided, the lack of independent, competent and credible accounting practices may affect the quality of the information (Kauffmann, 2005) and increase the reluctance of banks to provide loans required by SMEs (Temu, 1998). Otherwise, the problem of information asymmetry reflects a risk imbalance in favour of the firms. It is linked to the inadequate business experience and financial illiteracy of SMEs promoters as well as insufficient risk-based credit assessment of the credit application. Often, banks tend to increase the loans' interest rates in order to compensate for this issue. However, they cannot increase the interest rate up to a certain level for fear of attracting bad borrowers or unsound projects (adverse selection). This leads banks to focus on alternative criteria in order to select profitable and reliable clients. These are excessive collateral requirements, characteristics of the business and bank-lending relationship.

The existence of the information asymmetry issue between banks and the potential SME borrowers has severe implications in the lending methodologies used by loan officers. In the absence of sufficient financial information, banks generally rely on high collateral values, which according to bank reduces the risks associated with the problems of adverse selection and moral hazards resulting from imperfect information (Nott, 2003). According to this argument, it is clear that banks try to mitigate the lending risks through a capital gearing approach instead of focussing on the future income potential of SMEs. Therefore, collateral or "loan securitizations" have become essential prerequisites to access bank loans (AfricaPractice, 2005). For example, Azende (2012) study in Nigeria shows that SMEs struggle to access finance from banks due to stringent collateral requirements and inefficient guarantees schemes. Generally, young SMEs and those with low tangible assets (property, own equity capital, buildings or other assets) find it difficult to access

bank finance due to absence of collateral values. For example, Voordeckers and Steijvers (2008) demonstrated that 50 % of Belgium enterprises were credit rationed to none or short term credits due to lack of collateral values. In developing countries such as Cote d'Ivoire the issue of collateral requirements is much more severe due to high uncertainties IEF (2013) and constitute one of the major obstacles in SME financing.

Alternatively, a good lender–borrower relationship is acknowledged as a way to overcome asymmetry of information and inadequacy of collateral issues. But it may constitute a major constraint in the provision of debt financing to SMEs (Bhati, 2006, Holmes, et al. 2007, Ferrary, 2003). For instance, when there is imperfect information which is recurrent in most SMEs cases; a lender-borrower relationship becomes the main source of information and vital for loan approval. Assessing whether the borrower possesses an account with the bank, then the duration of the account and previous credit history can be viable for the loan officers in the evaluation of loan application. Mills et al. (2006) show a positive correlation between a positive lender-borrower relationship and the approval of loan. Preference can be given to firms which have established a strong and durable relationship with their banks and abide by all previous contractual arrangements.

Furthermore, the time of maturity or duration required by firms to repay the loans may also impact the SMEs accessibility to bank finance. Long-term loans are more difficult to obtain than short-term loans for simple reason that long–term loans require a long-term appreciation of the borrower's creditworthiness and involve elements of uncertainties. However, short-term contracts enhance the profile of the firms for future long-term contracts. It is referred to as a signalling instrument used by bankers (Flannery, 1986). Hence short-loans enable the lender to acquire qualitative information (character, repayment's punctuality) which reduces the problem of information asymmetry, moral hazards and adverse selection (Diamond, 1991). Empirical investigations conducted by Ortiz-Molina and Penas (2008) show that short loans facilitate access of SMEs to loans and reduce the problems associated with information asymmetry. Similar results were observed in the country, as banks are more willing to provide short-term loans to SMEs (BOAD and AFD, 2011). Kouadio, (2012) showed that banks credits are often issued at short-term 77.41%, 16.17% medium term and 1.86% for the long term. In other words, the ability of SMEs to access loans may also depend on the duration of the loans.

In addition, characteristics of firms such as age, size, industry, level of education of the owner, capital and organisation structure are key determinants in accessing banks' credits Aryeetey et al. (1994). In terms of size, banks tend to issue more credit to larger firms as compared to smaller firms. Additionally, young ventures at start-up levels may not have the level of expertise and success history required. Han (2008) analysed the impact of the business and entrepreneurial characteristics of firms on the credit availability and found that some characteristics of the entrepreneur (education, experience, personal savings) and business (age, size, location, industry) have a strong impact on bank's loan decision-making process. Moreover, Aryeetey, et al. (1994) argued that the size, internal management and level of capitalisation define the loan approval. Olawale and Asah (2011) evaluated the impact of the firm's characteristics with regard to access to finance in South Africa and identified two main groups of characteristics (business and entrepreneurial characteristics) influencing the provision of bank finance to SMEs.

The business characteristics are concerned with the age, size, location, organisational structure, industry or economic activity of the enterprises. Age of the firm is one of the influencing characteristics in the literature. Klapper et al. (2010) found that young firms (less than four years) rely more on internal financing than bank financing. Similarly,

Woldie, et al. (2012) in Tanzania observed that firms at start-ups and less than five years depended more on informal financing sources. It is generally expensive and difficult for new firms to acquire bank financing, mainly due to the information asymmetry problem and high collateral requirements (Ngoc et al 2009). Similarly, Bougheas et al (2005) in their studies found that young SMEs are generally more susceptible to a potential business failure than older firms. This increases the reluctance of banks to provide them with adequate loans. It also makes sense as older firms demonstrate more expertise, credit and success history than younger firms.

Furthermore, firms' sizes were likewise to affect access to bank finance. In China, Honhyan (2009) found that the investment portfolios of larger firms were more diversified, which lessen the probability of failure and makes banks more confident to issue loans based on their expertise and large assets structures. Cassar (2004) further argued that it may be relatively more puzzling for smaller firms to deal with the existing problem of information asymmetry than larger firms. Both arguments suggest that SMEs are generally offered less debt finance as compared to large firms due to their asset size and level of expertise. Cassar (2004) found a positive correlation between the size and banks' willingness to provide credits. Aryeetey et al (1994) in Ghana observed that large firms were more favoured by banks than small and medium-scale firms in terms of loan processing.

Similarly, the location of the enterprises also plays an important role in their creditworthiness level. Berger and Udell (2006) found that the geographical proximity of SMEs to their respective banks affect positively the banks' decision-making. It enables the loan officers to obtain better environmental information about the borrowing enterprises. Generally, banks are established in high class urban areas which makes difficult to assess businesses located in poor urban or rural areas. Gilbert (2008) points out that urban firms have better chance in accessing credits from banks than those who are in rural areas or poor urban areas. Additionally, a study conducted in South Africa also revealed that businesses in poor urban and rural areas are exposed to a high crime rate which increases the risks, uncertainties in repayment of debt or bankruptcy (Olawale and Asah, 2011). Subsequently banks are unenthusiastic to provide finance to business in those locations.

The industry or sector in which the company operates may also impact the decision of banks while appraising loan proposals. Myers (1984) argued that the industry may not determine the capital structure of SMEs but can indirectly influence the firm's asset structures. Indeed, Abor and Biekpe (2007) found that the Ghanaian firms involved in agricultural or manufacturing sectors have higher capital and asset structures than those operating in wholesale and retail sectors. Subsequently these assets can be used as potential collateral values for banks and encourage them to issue bank loans. However, the firms using rentable assets or having low assets structures, as is the case with service businesses, are subject to low financial access due to scarcity of collateral values.

On the other hand, the entrepreneurial characteristics of SMEs are more concerned with factors indirectly related to the business, such as managerial competency (business expertise, ownership structure, level of education) and gender of the owners. BIS (2012) states that entrepreneurs' skills and abilities greatly influence the quality of their proposals. Low levels of managerial competence can lead SMEs to publish only the proposal strengths and hide what they estimate to be of any default in the loan process. This alteration of information aggregates the adverse perceptions of bankers about the SMEs informality. Another fact is that generally the SMEs owners are the main decision-

makers in the business. This increases the probability of failure as their judgements are the important keys of success or failure of the business. Consequently, banks tend to favour more incorporation units where the power of decision-making is shared between shareholders or owners of the firms (Cassar, 2004). As opposed to family and single ownership businesses, incorporation are more organised and possess accurate financial data (books of account) along with good loan proposals. Also, Smith and Smith, (2004) argued that the lowest literacy level in Africa with 41% in Cote d'Ivoire (IMF, 2012) reflects the lack of education and training, which accounts for the failure of SMEs. This reinforces the position of bankers by allocating their loans according to the managerial capacity of firms in order to avoid any adverse selection.

In addition, according to the "reputational effects" many SMEs borrowers are discouraged due to poor previous experiences or other reasons. For example, some borrowers may be discouraged from applying for external finance due to a first refusal, the ethnicity minority, sex (female), requirements and bureaucracies Deakins et al (2010). Some firm owners do not even apply for loans because they think they will be rejected. A report in Scotland stated that 38% of SMEs reported to be poor in accessing finance and only 25% reported confidence (BIS, 2012). The problem of gender issues is mainly related to female applicants. Female owners are more restricted to loans than men Abor and Biekpe (2007). A study conducted in the United States demonstrated that women are unlikely to repay debts (Mijid, 2009). This increases the "discouraged borrower effect". Evidence also has been found in Australia and UK where women are discouraged to apply for loans as they think their applications would be rejected (Freel et al. 2010).

### **3 Data and Methodology**

Building upon literature a research framework has been derived particularly with the help of model proposed by Sheng et al. (2011). The research framework encompasses the variables identified in the literature. They are:

1. Availability of financial information
2. Availability of collateral
3. Lender and borrower relationships
4. Loan maturity period
5. Business characteristics (age, size, location and industry of the firms)
6. Entrepreneurial characteristics (ownership structure, owners' education level, gender of the owners).

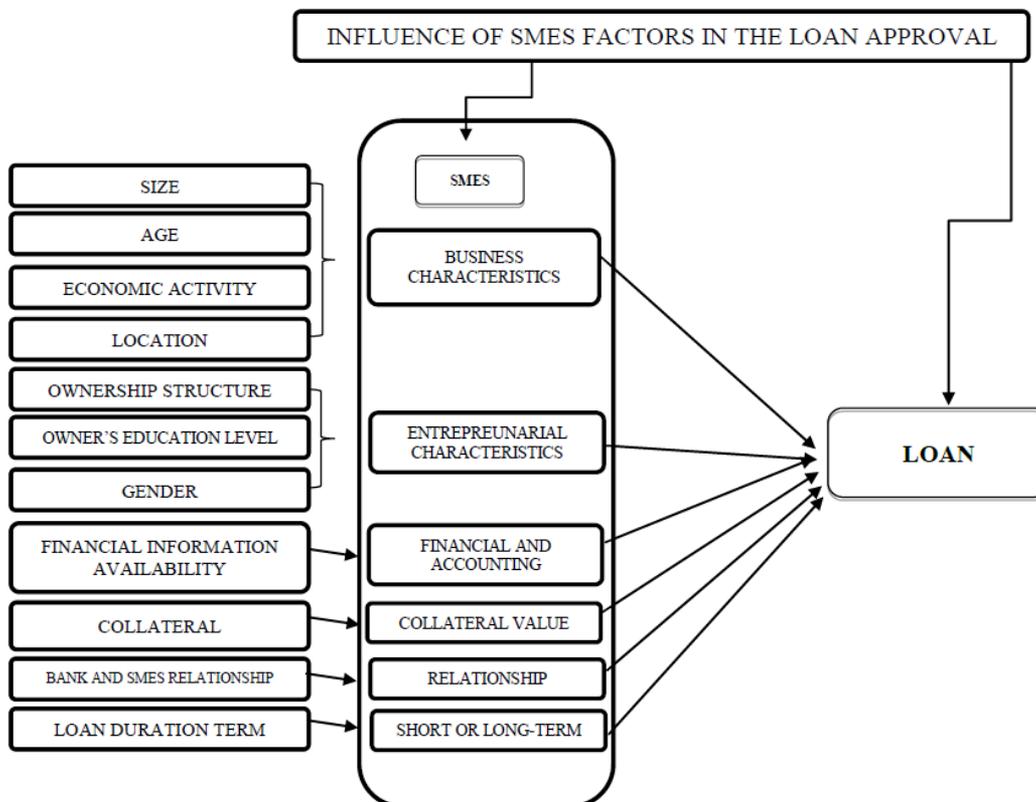


Figure 2: Analytical Framework for the study of SMEs Loan Financing Issues

Data was derived from questionnaires sent out to people in four major commercial banks (Bank Internationale de l’Afrique de l’Ouest, Ecobank, Banque Atlantique and Societe Generale de Banque Cote d’Ivoire) of the country. Each question was designed to address the factors identified in the literature as constraints to the SMEs’ accessibility to bank finance. The respondents were selected from the available up-to-date list of SMEs obtained from INIE (2012). Out of 50 questionnaires sent in both rural (Abengourou) and urban (Abidjan) areas, 36 responses were received. Respondents were managers/owners of SMEs therefore the knowledgeable members to answer the question. Further, only SMEs which have applied for loan recently with banks were included in the study.

Enterprises have been divided into three major categories based on annual turnover after tax (BOAD and AFD, 2011). They are Micro Enterprises (Turnover ≤ 30 Million CFA), Medium Enterprises (30 < Turnover ≤ 150 Million CFA ) and Small Enterprises (150 < Turnover ≤ 1000 Million CFA ).

The methodology includes descriptive statistics, cross-tabulations along with dependency tests (Chi-square, Cramer’s value). For analysis using diagrams, charts derived from cross-tabulations have also been presented. Moreover, correspondences analyses (joint-plots) were computed, displaying the relationships between the most pertinent variables and access to finance. Probability sampling technique was used within the survey.

## 4 Results and Findings

The descriptive statistics is available in table 4.

Table 4: Summary Statistics, Questionnaire Data

<i>Variables</i>	<i>Percentage</i>	<i>Variables</i>	<i>Percentage</i>
<b>Size</b>		<b>Keeping Books of Account (Financial Information)</b>	
<i>Micro-Enterprises</i>	<b>69.4</b>	<i>Yes</i>	<b>58.3</b>
<i>Small -Enterprises</i>	<b>27.8</b>	<i>No</i>	<b>41.7</b>
<i>Medium-Enterprises</i>	<b>2.8</b>	<b>Name of Bank</b>	
<b>Age</b>		<i>Banque Atlantique</i>	<b>19.4</b>
<i>0-2 Years</i>	<b>36.1</b>	<i>BIAO</i>	<b>30.6</b>
<i>2-5 Years</i>	<b>36.1</b>	<i>Ecobank</i>	<b>27.8</b>
<i>5-7 Years</i>	<b>13.9</b>	<i>SGBCI</i>	<b>22.2</b>
<i>7 years and Above</i>	<b>13.9</b>	<b>Duration of Bank Account</b>	
<b>Ownership Structure</b>		<i>0-3 Years</i>	<b>63.9</b>
<i>Single ownership</i>	<b>61.1</b>	<i>4-7 Years</i>	<b>25</b>
<i>Partnership</i>	<b>22.2</b>	<i>7 Years and Above</i>	<b>11.1</b>
<i>Family Owned</i>	<b>16.7</b>	<b>Loan Applied</b>	
<b>Gender of the Owner</b>		<i>Yes</i>	<b>100</b>
<i>Male</i>	<b>55.6</b>	<i>No</i>	<b>-</b>
<i>Female</i>	<b>19.4</b>	<b>Loan Processing</b>	
<i>Neutral(Partnership)</i>	<b>25</b>	<i>Accepted</i>	<b>30.6</b>
<b>Owner's level of Education</b>		<i>Partially Accepted</i>	<b>5.6</b>
<i>No education</i>	<b>8.3</b>	<i>Rejected</i>	<b>63.9</b>
<i>Primary Education</i>	<b>8.3</b>	<b>Availability of Collateral</b>	
<i>Secondary education</i>	<b>27.8</b>	<i>High value</i>	<b>16.7</b>
<i>University</i>	<b>30.6</b>	<i>Medium value</i>	<b>16.7</b>
<i>Unknown (Partnership)</i>	<b>25</b>	<i>Low value</i>	<b>16.7</b>
<b>Location</b>		<i>None</i>	<b>50</b>
<i>Urban (Abidjan)</i>	<b>52.8</b>	<b>Economic Activity</b>	
<i>Rural (Abengourou)</i>	<b>47.2</b>	<i>Agriculture</i>	<b>13.9</b>
<b>Major challenges during the last 2 Years</b>		<i>Construction</i>	<b>8.3</b>
<i>Lack of sufficient Capital</i>	<b>66.7</b>	<i>Manufacturing</i>	<b>13.9</b>
<i>High Competition</i>	<b>2.8</b>	<i>Retail</i>	<b>30.6</b>
<i>Bureaucracy Procedures</i>	<b>11.1</b>	<i>Services</i>	<b>33.3</b>
<i>Unfriendly Tax Policy</i>	<b>19.4</b>		<b>0</b>

Respondents were asked to indicate the major challenges encountered during the last two years. As can be seen in the table, the majority of firms (24 enterprises/66.7%) recognised the lack of adequate finance as their main challenge followed by an unfriendly tax policy and complex official registration procedures. This is consistent with other studies and reports (see for example Woldie, et al. (2012) in which authors found the development of 35 % of the Tanzanian SMEs were all restrained by their inaccessibility to finance. Moreover, the study of Ayyagari et al., (2006) and the reports of OECD, (2006), BOAD and AFD (2011) also showed that the majority of SMEs were challenged by an external finance shortage.

Similarly, it was observed that more than 60 % of the enterprises found their bank loan proposals rejected by their banks. A survey conducted by the BDRC (2011), found similar outcome, where more than half of the SMEs were incapable to obtain finance from banks and relied on their own internal funds/savings or supplier trade credits.

Next the results of the cross tabulation are discussed. The investigation and analyses are based on the research framework outlined above.

#### *Firm Size*

Out of the total loan applications from micro- enterprises, 88% were rejected by the banks. In case of small enterprises the rejection rate was lower at 10%. This shows that compared to micro-enterprises, small and medium enterprises are more favoured by banks. This could be due to relatively larger assets base and expertise of small and medium enterprises in the business (Aryeetey et al. 1994). It further confirms the analysis of Honhyan, (2009) that banks attached a significant importance to the size of enterprises as larger firms generally show more business expertise with a diversified investment portfolio.

#### *Age of the firm*

Another aspect was the age of the firms and the link with their accessibility to finance. A majority of enterprises were within the ranges of 0-2 years (36%) and 2-5 years (36%). The substantial number of young enterprises (0-5 Years) in the sample is consistent with previous studies where it was found that the majority of SMEs in developing countries are at start-ups or very early level (Hsu, 2004; Woldie, et al., 2012). This makes sense as many owners are recent unemployed school leavers trying to find an alternative source of income. There is 100% rejection in the case of younger firms (0-2 years of establishment) showing age as a crucial factor in obtaining loan. It reveals that access to bank finance becomes more probable as the enterprises age increases. Hussain, et al., (2006) obtained the same result for other countries such as China and UK. Deakins, et al., (2010), Klapper, et al., (2010), Ngoc, et al., (2009) and Woldie, et, al. (2012) found similar results in their studies where younger firms had less access to bank finance than older firms due to lack of required financial information and inadequate collateral.

#### *Ownership Structure*

In line with literature, this study identifies ownership structure as an indicator of managerial competency. In this sample, the ownership structure was biased towards a single ownership structure (61.1%) probably due to nature of start-up businesses in the country. The cross-tabulations revealed a higher rate of loan acceptance (62.5%) for the partnership enterprises and a very low rate for single (18.3%) and lower for family ownership (33.3%). These results reveal that the applications made by structured associations (partnerships) were more successful than those made by single owners or family businesses.

#### *Gender of the owner*

The significance of the gender implication in this empirical research, results from a general perception that female applicants are viewed as more risk adverse than male applicants. The majority of SMEs owners were male respondents with 55.6%, 19.4% of female and 25% of business associations. This portrays a large presence of male owners as compared to female owners. It also highlights the weak presence of female

entrepreneurs in the country. The results show that female applications (85.7%) had a higher rejection rate than male (65%). This revealed that female owners were more unsuccessful than male owners in their quest of bank loans. This is consistent with Abor and Biekpe (2007), Freel et al. (2010) and Deakins, (2003) who found higher preferences to male applicants.

#### *Owner's level of Education*

The majority of the owners (30.6%) possessed a university level education followed by 27.8% having a secondary education and very few 8.3% each having either a primary education or no education. Owners with secondary and university education were rejected at respectively 80% and 45.5%. These results are in harmony with the report of BIS (2012) and study of Smith and Smith (2004) suggesting that low-educated owners are unable to provide good loans proposals as they are generally unfamiliar and less knowledgeable with regards to banks processes.

#### *Location*

SMEs located in both rural and urban areas have been surveyed which makes this study unique. The cumulative percentage of loan rejection in the urban area (47.4%) was drastically lower than in the rural area (82.4%). It shows that SMEs in urban areas have more access to bank finance compared to rural based enterprises. These results are broadly consistent with the results obtained in other investigations (Gilbert, 2008). It also evokes the point raised by Berger and Udell (2006) that the geographical proximity between the banks and borrowing firms positively influence their access to finance.

#### *Availability of Financial Information*

The evidence gathered in this study showed that nearly 42% of the enterprises were not maintaining their financial accounts. It is also observed that only the firms which kept financial statements were able to secure the loan. In this study, all 11 enterprises that produced financial information were able to receive finance from banks. These findings match the results of literature (Iorpev, 2012, Olomi 2009, Temu 1998, Lefilleur 2009, Fraser 2005). On the other hand, it was seen that applicants lacking relevant information were turned down by their respective banks as there was no signal available to loan officers about their current and future performance (Kitindi et al. 2007). In this study, 21 firms were without financial documents and none received finance from bank. This reflects the fact that bankers based largely the evaluations of loan proposals on borrowers' financial information (Ruffing, 2002). Moreover, the Chi-square test (table 5) provided a probability value inferior to 5% which confirmed the undeniable importance of financial information in the loan processing. This is definitely one of the indubitable factors limiting the majority of SMEs to access bank finance in the country.

#### *Relationship with Bank (Time Period)*

SMEs and bank relationship was measured based on number of years the SMEs have been transacting with their respective banks. However, it should be noted that an additional appraisal of the enterprise credit score would have been more appropriate. But the information was practically unobtainable from the banks which compelled the researcher to take number of years as proxy. It is observed that the majority of loans were attributed to firms which developed a durable and constant relationship with their respective banks (i.e. more than seven years), followed by those between four and seven years. This is

consistent with the paper by Mills et al. (2006) where authors found a positive correlation between the loan approval and long term relationship.

#### *Length of Loan period*

Respondents were also asked to provide information concerning the tenure of the loans applied with the banks. The cumulative percentage show that 83.3 % of loan proposals requiring a long repayment term (more than one year for repayment) were not accepted compared to 54.2% of short-term (less than one year for repayment). In other terms, banks in the country are more willing to issue short-term loans than long-term loans. This is consistent with the study of Kouadio, (2012) in Cote d'Ivoire; revealing 77.41% for short-term finances and only 1.86% for long-term projects. Further, this phenomenon was explained in Flannery, (1986), Diamond (1991) studies where the short-term loan contracts were argued to be used to test initially the borrowers' character and solve the problem of information asymmetry.

#### *Collateral*

Respondents were asked to provide information about the requirement of collateral to secure the loans that were applied. The collateral value of the applicants were categorised within the stages of "no collateral" to "high collateral". The enterprises with unregistered possessions were attributed to a no collateral status. The results demonstrated that enterprises which possessed considerable collateral values had more opportunity to access bank finance as compared to those having low or no collateral values. These results go along with Azende (2012) and Voordeckers and Steijvers (2008) findings where it was ascertained that almost 50% of Belgium enterprises were rationed due to lack of collateral values. The computed percentage shows that firms having high collateral and medium collateral had access to loans at respectively 100% and 83.3%. It can therefore be observed that banks tend to mitigate the risks involved with the SMEs by enforcing the provision of adequate collateral value.

It was also found that most of the firms operated in service sector (33.3%) followed by retail (30.6%), agriculture and food processing (14%), construction (8.3%) and manufacturing businesses (14%). In the service and retail businesses, fixed capital and asset structures are relatively unimportant (Abor and Biekpe 2007). This perhaps explains the higher refusal rates (91.7% for service and 63.6% retail) as it may be difficult to pledge the fixed assets as collateral security. However, it was noted that the agricultural sector also suffered from high rejection. This contradicts with the findings of Abor and Biekpe, (2007) where the firms in the agricultural sector were having more access to loans.

The chi-square tests were also simultaneously conducted with the cross-tabulations in order to analyse the dependency of other variables on the loan processing status of the enterprises. It is reported in table 5.

Table 5: Results of Cross-Tabulations, Chi-Square and Symmetric Measures

No	CROSSTABLATIONS	CHI-SQUARE TESTS				SYMMETRIC MEASURES			
		Value		ASYMP.SIG(2SIDED)		PHI		CRAMER'S VALUE	
		Pearson Chi-square	Likelihood Ratio	Pearson Chi-square	Likelihood Ratio	VALUE	SIG.	VALUE	SIG.
1	SIZE AND LOAN PROCESSING	27.252	29.587	0.000	0.000	0.870	0.000	0.615	0.000
2	AGE AND LOAN PROCESSING	34.905	40.390	0.000	0.000	0.985	0.000	0.696	0.000
3	OWNERSHIP STRUCTURE AND LOAN PROCESSING	6.21	6.611	0.184	0.184	0.415	0.184	0.294	0.184
4	OWNER'S GENDER AND LOAN PROCESSING	1.284	1.798	0.526	0.407	0.218	0.526	0.218	0.526
5	OWNER'S LEVEL OF EDUCATION AND LOAN PROCESSING	7.105	8.467	0.311	0.206	0.513	0.311	0.363	0.311
6	LOCATION AND LOAN PROCESSING	5.447	5.803	0.066	0.055	0.389	0.066	0.389	0.066
7	AVAILABILITY OF FINANCIAL INFORMATION AND LOAN PROCESSING	28.487	35.312	0.000	0.000	0.890	0.000	0.890	0.000
8	BANK AND SMEs RELATIONSHIP AND LOAN PROCESSING	31.436	34.751	0.000	0.000	0.934	0.000	0.661	0.000
9	LOAN MATURITY TERM AND LOAN PROCESSING	3.202	3.906	0.202	0.142	0.298	0.202	0.298	0.202
10	AVAILABILITY OF COLLATERAL AND LOAN PROCESSING	37.968	47.441	0.000	0.000	1.027	0.000	0.726	0.000
11	ECONOMIC ACTIVITY AND LOAN PROCESSING	18.154	18.624	0.02	0.017	0.71	0.02	0.502	0.02

The tests found a high significance ( $p - value \leq 0.05$ ) between several variables (i.e. size, age, financial information availability, SME-banks relationships, availability of collateral, economic activity) and their relationship with processing of credit applications. The test therefore suggests that there is high dependency between the variables and access to finance.

In order to further support the results and analyses above, joint-plots of category points have been generated to examine the interrelation between the variables. This is made available in the appendix.

The findings of the joint-plots analyses reveal the followings:

- Enterprises with high or medium collateral values and records of books of account found it easier to obtain credit.
- Small scale enterprises (mostly aged between five to seven years and were keeping books of accounts) and medium enterprises (seven years and above and also kept books of accounts) had better access to finance as compared to micro-enterprises that were younger and without financial information.
- It is observed that low educational attainment, particularly in rural areas, affects business practices. As opposed to urban businesses where the majority of the owners have a university level education, rural businesses do not keep proper financial records. This may be explained by the low literacy level stated earlier and the unfavourable environment in which they operate. In fact, rural businesses lack proper guidance on how to maintain proper records of their financial activities and are generally geographically distant from banks.
- The location is also identified as another key factor as firms in rural areas didn't enjoy better access to finance as compared to firms located in urban area. This may be due to the fact that businesses in the rural areas are mainly owned by non-educated and primary educated individuals who are unable to provide financial information (books of accounts).

Based on cross-tabulations and Chi-square results and above it can be concluded that the problem of information asymmetry and lack of adequate collateral are the major requirements to access finance.

## **5 Conclusion**

This paper offered a comprehensive exploration of factors influencing bank finance among SMEs in Cote D'Ivoire.

The research started by identifying the firm-specific attributes susceptible to affect the access of SMEs to bank finance. Various factors identified by the literature were explained. The factors constraining demand side issues related to the firms were: size, age, location, ownership structure of the enterprise, gender, level of education and length of relationship between the firm and the bank, length of loan period, collateral and availability of financial information. A research framework to undertake the analysis was then developed embedding all these important factors. Enterprises were divided into three major categories based on annual turnover after tax. They were Micro, Medium and Small Enterprises.

In the methodology, cross tabulation, chi-square tests, and joint plot analysis were included. Questionnaires were responded by SMEs in both rural and urban areas of the country. The findings and analyses revealed that the variables included in the research framework significantly affected SMEs access to bank finance in Cote D'Ivoire.

The SMEs located in urban areas were found to have sufficiently made available the financial information to the banks and were also able to secure loan compared to SMEs in rural areas. In addition, it was found that the majority of SMEs were unable to provide collateral which was due primarily to poor financial structures (i.e. lack of fixed assets) and business cycle stage of the firms. It was observed that enterprises that were start-up and young (mainly micro enterprises) were more exposed to the problem of information asymmetry and inadequacy of collateral as compared to medium and small enterprises. Furthermore, it was observed that banks and SMEs relationships were very important as firms maintaining longer relationships with banks achieved a higher rate of loan acceptance. Besides, it was found that highly educated owners were more knowledgeable about the banking procedures (i.e. informational requirements) as compared to low or no educated operators which resulted in more access to bank finance.

The study also revealed that in Cote d'Ivoire partnerships firms generally possessed long business expertise (i.e. age factor) and were more favoured by the banks (compared to individual and family owned businesses) due to their well-arranged asset structure and risk diversification.

Finally, we observed that issues related to inadequate collateral and lack of financial information were major constraints for SMEs to obtain bank loans. Interestingly, all firms that provided financial information to banks were able to secure loans. Banks seem to have required a high level of collateral to mitigate unforeseen risks as the financial soundness of the enterprises could not be ascertained due to lack of financial reports.

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## Appendix

### Cross tabulation Analysis, Demand Side Factors and Access to Finance

#### Firm Size

	Loan Processing			Total
	Accepted	Partially Accepted	Rejected	
Micro-enterprise	1	2	22	25
Size of the enterprise Small-enterprise	9	0	1	10
Medium-enterprise	1	0	0	1
Total	11	2	23	36

#### Age of the Firm

	Loan Processing			Total
	Accepted	Partially Accepted	Rejected	
0-2	0	0	13	13
Age of the enterprise 2-5	1	2	10	13
5-7	5	0	0	5
7 and Above	5	0	0	5
Total	11	2	23	36

#### Ownership Structure

	Loan Processing			Total
	Accepted	Partially Accepted	Rejected	
Single Ownership	4	2	16	22
Ownership Structure Partnership	5	0	3	8
Family Owned	2	0	4	6
Total	11	2	23	36

#### Gender of Owner

	Loan Processing			Total
	Accepted	Partially Accepted	Rejected	
Gender of Owner Female	1	0	6	7
Male	5	2	13	20
Total	6	2	19	27

**Owner's level of Education**

		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Owner's level of education	No Education	0	0	3	3
	Primary Education	0	0	3	3
	Secondary Education	1	1	8	10
	University	5	1	5	11
Total		6	2	19	27

**Location**

		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Location of the enterprise	Rural	2	1	14	17
	Urban	9	1	9	19
Total		11	2	23	36

**Availability of Financial Information**

		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Availability of Financial Information	No	0	0	21	21
	Yes	11	2	2	15
Total		11	2	23	36

**Relationship with the Bank (Time Period)**

		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Duration of the Bank account	0-3	1	0	22	23
	4-7	6	2	1	9
	7 and Above	4	0	0	4
	Total	11	2	23	36

**Length of Loan Period**

		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Loan maturity Term	Long-Term	2	0	10	12
	Short-Term	9	2	13	24
Total		11	2	23	36

**Collateral**

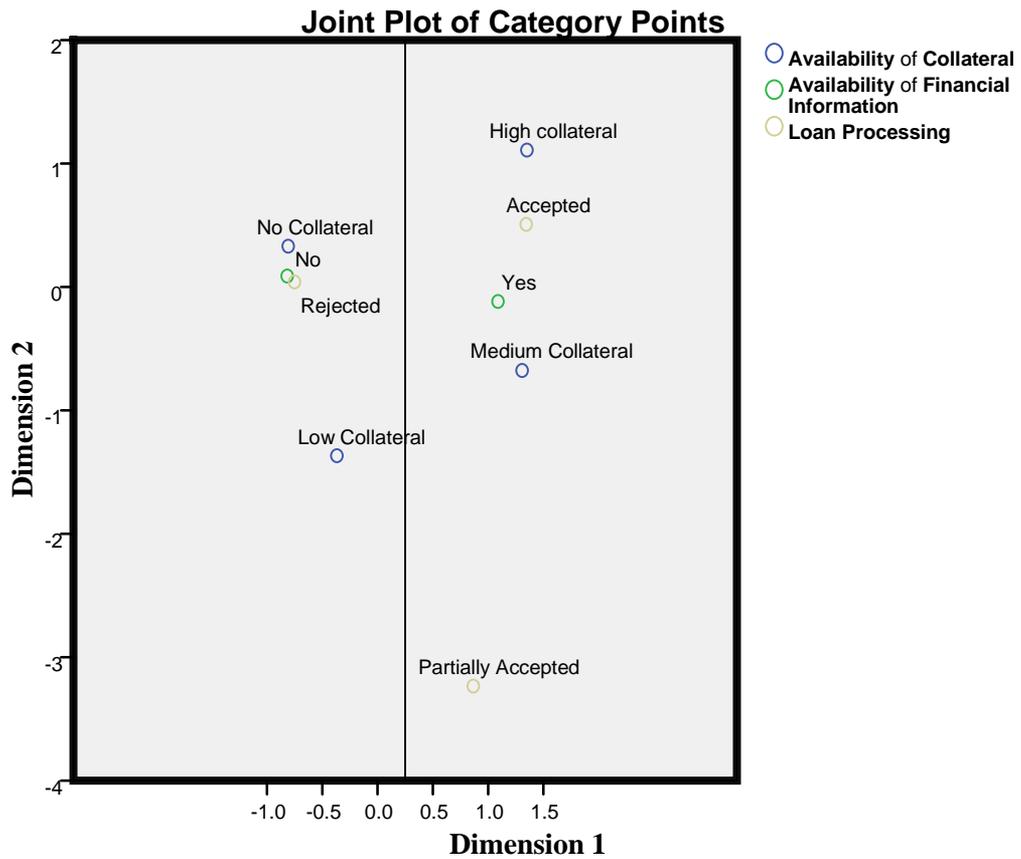
		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Availability of Collateral	High collateral	6	0	0	6
	Medium Collateral	5	1	0	6
	Low Collateral	0	1	5	6
	No Collateral	0	0	18	18
Total		11	2	23	36

**Economic activity (Sectors)**

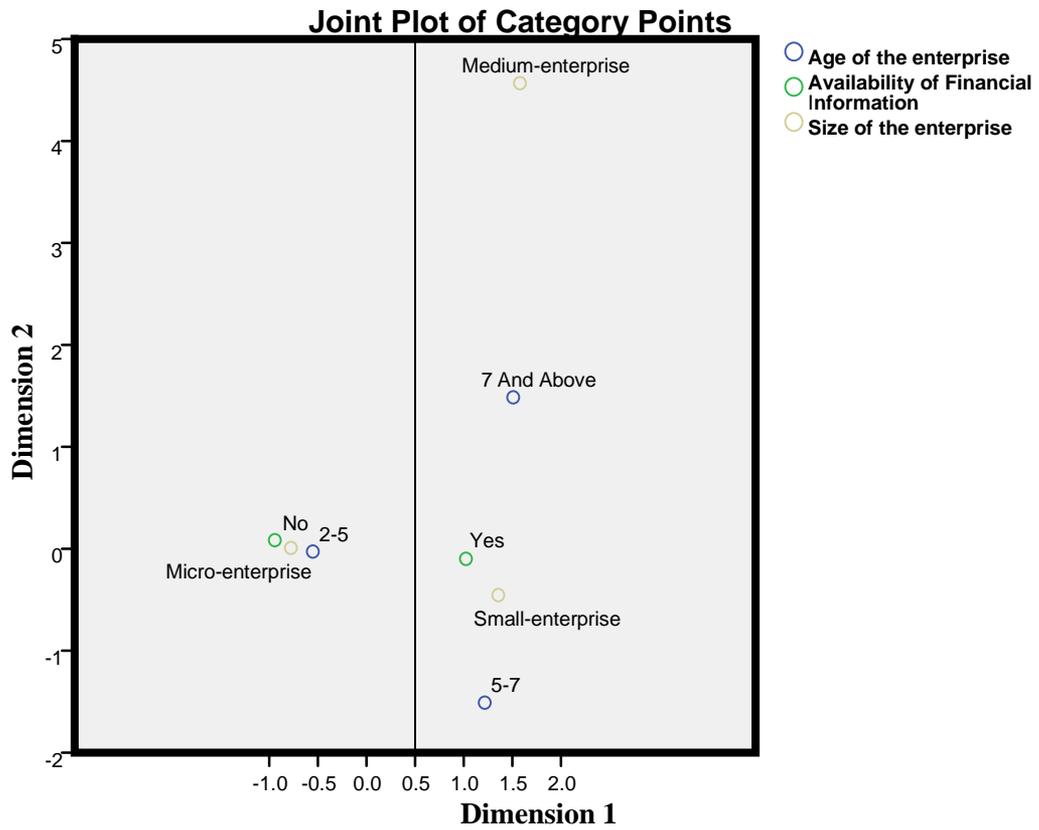
		Loan Processing			Total
		Accepted	Partially Accepted	Rejected	
Economic activity	Agriculture	1	0	4	5
	Construction	2	1	0	3
	Manufacturing	4	0	1	5
	Retail	3	1	7	11
	Services	1	0	11	12
Total		11	2	23	36

**Multiple Correspondence Analyses**

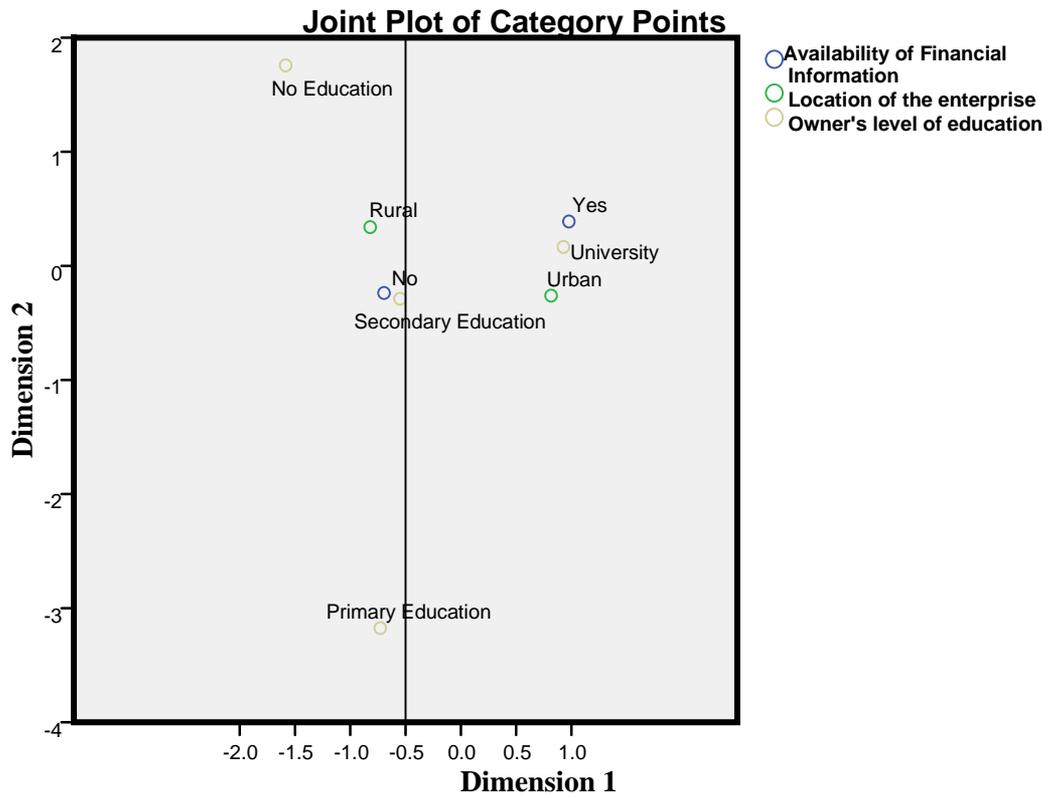
**Plot A: Joint Plot of Collateral and Financial information availability and Loan Processing**



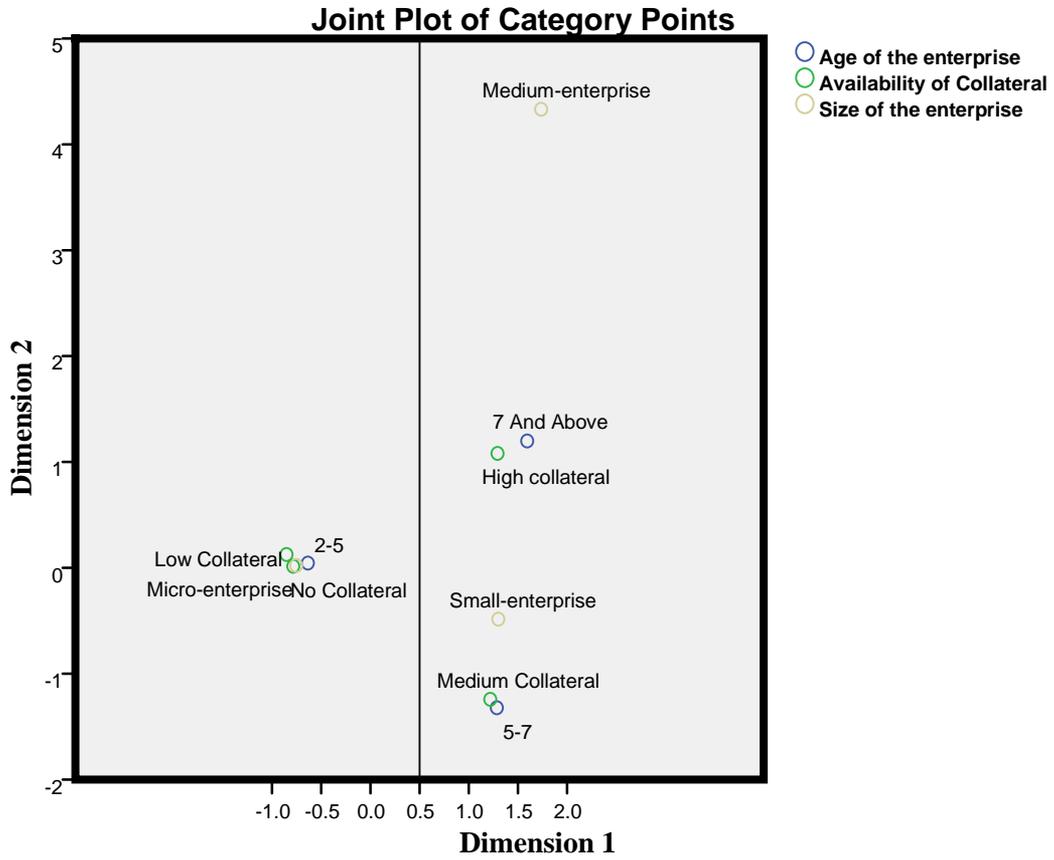
**Plot B: The bond between age, size and availability of financial information variables**



**Plot C: The bond between location, owner’s level of education and availability of financial information variables**



**Plot D: The bond between the age, size and availability of collateral value**



**Plot E: The bond between the location, industry and availability of collateral value**

