

Determinants of Access to Credit by Agri-SME Operators in the Kumasi Metropolis, Ghana

ABSTRACT

Aim: The study was conducted to analyze the factors that influence access to credit by Agri-SME operators in the Kumasi Metropolis of the Ashanti Region of Ghana.

Study Design: The study used a multi-stage sampling technique to select 151 SME operators engaged in the agribusiness sector. Well structured, mostly closed ended questionnaires were used to collect cross sectional data from the respondents.

Location and Place of Study: The study was conducted in the Kumasi Metropolis, which is the capital of Ghana's second largest city with a population of about 2 million people and has a large SME sector especially in the informal sector.

Methodology: Both qualitative and quantitative methods were employed to analyze data. The Logit model was employed as the statistical tool to analyze the factors that influenced access to credit by the Agri-SME operators in the study area.

Results and Discussion: The empirical results show that the factors that significantly influenced credit accessibility for respondents in the study area were the credit management skills, borrowing experience, possession of collateral security, firm size, extra income earned by operators and membership of business organization. The major constraining factors faced by respondents in their credit application from the formal sector include high interest rate, inadequate loan amount and unfavorable loan terms.

Conclusion and Recommendation: Agri-SME operators should be encouraged to form or join business organizations and also strengthen such associations for enhanced networking leverage. Agri-SME operators should be encouraged to build on their credit management skill by engaging more with financial institutions and strengthen relationship as a means to enhance credit access. Financial institutions, especially the Rural and Community Banks and Savings and Loans Companies should strive to offer more competitive terms and conditions, especially interest rates to Agri-SMEs that apply for credit as a group.

Key words: Credit Access, Credit Constraints, Agri-SMEs, Kumasi Metropolis, Logit Regression

1.0 INTRODUCTION

The significance of agricultural finance is demonstrated in its capacity to potentially serve as an enabler of inclusive growth and poverty reduction, productivity enhancement, improved income for producers, and overall balanced regional development [1]. For a developing country like Ghana, whose economy is fundamentally agriculture-driven, and based on the fact that the sector is dominated by smallholder producers and small scale agribusinesses, their performance, with respect to financial investment and the impact it can make is very critical and worth considering. Across the advanced world and developing countries, the small and medium enterprises (SMEs) sector, including Ghana's Agri-SMEs, generates the bulk of economic activity [2], [3], [4], [5] and [6]. There is a huge and widespread consensus, that access to finance, particularly bank financing can radically transform the outlook and performance of the SME sector especially in the developing countries. For example, a number of studies including firm-level data from the World Bank over the years, show that inadequate financing is a greater obstacle for SME's than it

is for large firms, particularly in the developing world, and that **inaccessibility** to finance adversely **affects** the growth of the SME sector more than that of large companies [7], [8], [9] **and** [10]. For many agribusinesses and their value chain actors, access to credit can **facilitate** investments in productive operations, the adoption of latest technologies and the scale-up of production activities in order to enhance productivity and competitiveness [11], [12], [13] and also increase profitability [14].

Although there has been improved support from development agencies, **international donors** and governments to boost agriculture production in recent years through various policy interventions and programs (for example, MiDA, RTIMP, NGRP in Ghana), lack of access to formal credit especially for agribusinesses engaged in downstream processing, distribution and marketing has constrained the optimal realization of enhanced value-added and economic growth [1]. Agribusinesses and their value chain actors require a comprehensive suite of well crafted financial services and products needed to improve their overall productivity and growth. Smallholder farmers require working capital to purchase and adopt modern technologies (improved seeds, fertilizers, crop protection chemicals, basic storage facilities etc) that enhance output and profit. Aggregators, processors, and marketers of agricultural commodities also need credit to facilitate product transformation and other downstream value-adding activities. Conceptually, the flow of adequate, well structured and timely credit facilities through these agri-linkages can potentially spur the much needed growth within the agribusiness sector which remains largely **rudimentary** for a country like Ghana. The limited access to finance however, for most agribusinesses and the associated harsh credit market conditions appears to be a major hurdle to the realization of the **sector's** optimal potential.

1.2 Problem Statement

It is rather ironic that in spite of the obvious economic growth potential of the agribusiness sector to the economy of developing countries including Ghana, Agri-SMEs appears to be the most constrained when it comes to the provision financial investments or access to finance [15], [16], [17]. Currently, only about 6% of total commercial bank credit goes to the agriculture sector, including cocoa, forestry and fisheries [18], while overall only 2%–10% of Ghana's financial institution's portfolios support agribusiness, which is significantly lower than agriculture's share of GDP (30%) in 2010. The formal financial sector particularly commercial banks, which constitute the mainstream source of finance for businesses across countries (see [19], [20], [21] and [22]) are reluctant to provide credit to SMEs in general and the agriculture sector in particular. The reluctance of the formal sector to lend to agribusinesses, including upstream primary production, stems from the real and perceived high risk of the sector. Small business operators on the other hand also perceive formal credit to be inaccessible due to rigid terms and conditions. For example the demand for securable collateral, regular loan repayments typically on monthly basis instead of seasonal repayments and rigidities in loan applications and disbursement are all deterrent to most agribusiness operators. These demand side and credit side constraints have resulted in a yawning financial gap within the formal credit market in Ghana. Increasingly therefore, many agribusiness entrepreneurs including input suppliers, smallholder producers, distributors, processors, wholesalers and retailers usually resort to informal sources of credit to finance their businesses. Unfortunately these informal credit services tend to be unreliable, costly, inefficient and very expensive [23]. According to the International Finance Corporation (IFC), access to finance for agribusinesses tends to be severe for upstream activities, particularly farm production than it is for downstream operators like processor, wholesalers,

marketers, retailers [24]. However, [25] has indicated that access to credit for Agri-SMEs is as challenging as it is for upstream production activities that usually occur at the rural and farm level.

Given the crucial role of credit in enhancing the competitiveness of agribusinesses, especially in value-adding activities, this study attempts to gauge the credit situation for agribusinesses, to ascertain whether or not Agri-SME operators have access to credit? For those who are able to access credit, what are the major sources of credit? What factors influence credit access by these actors and what constraints do they encounter in their credit acquisition process from the formal financial sector in Ghana? The goal of this paper therefore is to investigate the factors that influence access to credit by Agri-SMEs in the study area. The specific objectives are to examine the credit status and experience of Agri-SME operators in the study area; to measure and quantify the factors that influence credit access and identify and rank the constraints in loan acquisition by Agri-SME operators.

While empirical research on credit for SME's in general and smallholder farmers in particular abound in Ghana, there appears to be very little work on credit access for Agri-SMEs operating within the agribusiness sector. The outcome of this study is expected to fill the research gap, particularly credit experience and accessibility by Agri-SME's along the pre-farm and post-farm end of the agricultural value chains.

2.0 LITERATURE REVIEW

Agricultural SME finance is defined as financial services for small and medium scale enterprises engaged in agricultural production and production related activities along the agribusiness value

chain, such as input supply, processing, wholesaling, trade and marketing [24]. This study considers Agri-enterprises engaged in off-farm activities within the agricultural value chain.

Credit is an instrument whose effectiveness depends on the economic and financial policies that go with it [26]. According to [27] credit means ability to command capital in return for a promise to pay at some specific time in the future. Access to credit is very crucial to agribusiness especially in less developed countries of the world. Access to credit (formal or informal) can be explained as the ability of an individual to borrow from a particular source, although for a variety of reasons it may choose not to [28]. The extent of access to credit is measured by the credit limit of the individual. Thus individuals with a positive credit limit are said to have access and vice-versa. According to [29] ‘credit accessibility’ refers to the ease or difficulty of acquiring credit from borrowers to enhance business performance. Access to credit (also referred to as financial inclusion) can be seen as the absence of both price and non-price barriers in the use of financial services. [30], therefore posit that, access to credit is restricted to a small proportion of the population who can overcome significant barriers to credit such as high minimum balance for account opening, collateral requirements and a long and costly bureaucratic process. There are a plethora of arguments and critique of SME financing and the factors that enhances or constraints their access to or demand for credit. In the forgoing literature, the study examines some key variables that influence the access to formal credit using evidence from SME’s in agribusiness and as well as non-agriculture related activities. In other words, the study assumes that Agri-SME’s behave and thus share some similar characteristics or profile with both normal SME’s and agriculture.

Ghana’s financial sector is classified into three sectors: formal, semi-formal and informal. The formal sector includes Commercial Banks, Non-Bank Financial Institutions (NBFIs), Rural and

Community Banks (RCBs), and Savings and Loans Companies (SLCs). As of 2010, Ghana had about 23 major banks including 3 development banks, 4 commercial banks, and 16 universal banks. The NBFIs sector includes 36 institutions made up of 17 savings companies, 13 saving and loans companies, 4 leasing companies, 1 discount house, and 1 mortgage company. The 23 major banks accounts for approximately 90% of the total assets of the banking and nonbanking sector, whereas the NBFIs account for 5% of the total assets [31]. Most financial institutions in the formal sector are concentrated in the urban and peri-urban areas of Greater Accra, Ashanti and the Eastern regions, with limited outreach to the rural areas of Ghana. According to [18] the formal financial sector controls about 40% of the money supply in the overall financial sector with the remaining amount believed to be outside the formal system [32]. Thus, institutions such as RCBs and informal and semiformal financial service providers play an important role in addressing the lack of access for many clients outside the formal sector.

2.1 Empirical Analysis and Evidence of Determinants of Access to Credit

Access to financial services, particularly credit is dependent on or influenced by several factors which are within and beyond the control of borrowers. Based on evidence from several empirical findings, this study can conveniently conceptualize that credit access by agribusinesses is influenced by four major factors namely socio-economic characteristics, managerial attributes, firm characteristics, and institutional factors.

2.1.1 Socio-economic Characteristics – Several demographic and socio-economic variables have been cited in various studies as determining access to credit by SME borrowers. [33] in a study of determinants of access to credit by SMEs in Kenya showed that the marginal effects of

educational level, occupation type (salaried, off-farm income, self-employment) were significant and positively influenced access to credit while distance to credit source and total value of income were negatively significant to credit access. However, age, gender marital status and group membership did not significantly influence credit access. Females in many developing countries appear to have limited access to credit and are even discriminated against [34] and [35] than their male counterparts, apparently due to socio-cultural factors. However, studies by [36] and [37] in Ethiopia showed that the formal financial institutions offered more credit to female headed households than their male counterparts.

Then [38] in an analysis of determinants of access to institutional credit by SME's in India showed that business registration, accounts record keeping, and higher education of business owners positively influenced access to credit. This is because well educated entrepreneurs are better placed to have access to information on credit, high financial literacy ability and good managerial skills in production, finance and marketing compared to their less educated or illiterate counterparts [39]. There is therefore a close relationship between the educational status of entrepreneur and their managerial competency. Empirical studies have also proven that managerial competencies of SME operators greatly influence ease of credit access and vice-versa [40] and [41].

In another study in Limpopo, South Africa [42] found that loan repayment periods, risk and uncertainty, distance between borrower and lender, and business experience of borrower were significant but negatively influenced credit access. [38] showed that access to credit by SMEs improved with business registration, record keeping and the educational level of entrepreneur. [43] and [44] in a study of enterprise access to credit in India, showed that the firm size, age, and collateral security of enterprise had positive and significant influence on access to bank loans.

2.1.2 Firm-specific characteristics – For Agri-SME's as with mainstream SME's also influence credit access. Financial institutions consider and are more likely to use firm size (proxied by employee numbers in some cases) as a criterion for lending [43]. This is because large firms tend to be more diversified and less prone to failure [45] and are most often endowed with more real assets which enable them to attract long term debt than smaller firms [46]. The availability of fixed assets by firms also serves as collateral security which offers borrowers with high financial leverage to secure credit facilities [47]. Firms with more secured and valuable collateral security therefore present better chances of accessing credit than their less endowed counterparts [48]. [42] **again** showed that assets accumulation or value of assets though significant, it negatively influenced credit access in the study area. The geographic proximity or distance between banks and customers has a relationship on a firm's use of leverage [49], because it allows banks for **example** to assess, evaluate and monitor clients at least cost and more efficiently. The number of years of a firm has been in operation also has an impact **on** access to credit. Thus Agri-SME's with long years of operation would have developed or built business operational capacities and experiences including–management, financing, marketing, that are more likely to make them more resilient and attractive to the formal sector compared to much younger firms [50], [51], [52] and [53].

2.1.3 Financial institutions – **Financial Institutions** which are the suppliers of financial services or credit have peculiar characteristics **that** impact on the availability or otherwise of credit to borrowers. These institutional factors have been identified to include conditions like operating an account with the financial institution **which usually** give an indication **of the** credit management capacity of borrowers. Similarly the number of years of operating an account with the financial institution builds some level of relationship between lender and borrower, and thus enhances

credit access. The ability of firm to keep proper **financial** records including financial statement signifies some level of management capacity thereby reducing information asymmetry problems and also builds the level of transparency from the lenders perspective [54] and [55].

3.0 METHODOLOGY

3.1 Study Area and Location

The study was conducted in Kumasi, which is located in the Ashanti Region of Ghana. The Ashanti Region lies between longitude 0° 15'W– 2° 15' and latitude 6° N– 7° 30'N of the equator. Kumasi is Ghana's second largest city with a population of about 2,035,064 according to the 2010 National Housing and Population Census conducted by the Ghana Statistical Service (GSS). The city, a typical cosmopolitan area, depicts a fair share of vibrant economic activity, particularly trade and businesses within the informal sector. The vibrancy of economic activity is demonstrated by the huge presence and dominance of the small and medium enterprises, of which Agri-SMEs are well represented.

3.2 Sampling Technique and Data Collection

A multistage technique was used to select some 151 respondents for the study. In particular food processors, agri-food marketers, and agro-input dealers were purposively selected for the survey as they are quite dominant within the agribusiness operators in the study area, particularly within the urban (central business district of Adum and Kejetia market) and peri-urban area. The second stage involved a random selection of individual respondents. Data **were** collected using well structured, mostly close ended questionnaires that captured information on the socio-economic and firm characteristics of as well credit history of the respondents.

3.3 Analytical Framework and Model Specification

233 Decision by an entrepreneur to access credit is influenced by a number of factors and
 234 considerations. Decision and choice model of this nature usually involves the use of an
 235 appropriate utility maximization approach, such as the logistic regression model. The logistic
 236 regression model was employed to determine the factors that influence an entrepreneur's ability
 237 to access credit from formal financial sector. Logistic regression is particularly useful where the
 238 dependent variable, (access to credit), is dichotomous. In this analysis, Y_i represent an
 239 entrepreneur's decision to access or not to access credit from the formal financial institution.
 240 Y_i is assumed to be dependent on a vector of individual socio-economic characteristics, as well
 241 as institutional factors (X_i). The relationship between the dependent and explanatory variables is
 242 stated as:

$$243 \quad Y_i = a + \beta'X_i + \mu_i \dots\dots\dots(1)$$

244 Y_i (dichotomous) takes on the value of '1' or '0'. The decision of the agribusiness operator to
 245 access credit is informed by the marginal cost and benefit he or she expects to derive from the
 246 use or otherwise of the credit. However, practically speaking the marginal utility (cost and
 247 benefit) is not observed, thus equation (1) cannot be estimated. The observation can only be
 248 derived from the responses made by the respondents in the survey. Thus, another variable is
 249 introduced to capture the reality of the use or non-use of credit as Y_i^* , such that:

$$250 \quad Y_i^* = \begin{cases} 1 = & \text{if respondent was able to access credit from formal sector} \\ 0 = & \text{if respondent did not access credit from formal sector} \end{cases} \dots\dots\dots(2)$$

251 Thus

$$252 \quad Y_i^* = \alpha + \beta^i X_i + \mu_i \dots\dots\dots(3)$$

253 Though in the analysis of data involving binary choice models, three commonest approaches
 254 such as the Linear Probability Model (LPM), the Logit and the Probit Models, are possible,

several research analysts have settled for the latter two. The Logit and Probit models according to [56] and [57] are preferred because of their similarity and most importantly to avoid the limitations associated with the LPM, where the estimated probabilities can lie outside 0-1 [58].

According to [59] both the Logit and Probit are non-linear models and are estimated using maximum likelihood (ML) method. In addition, [60] noted that both Logit and Probit models guarantee that the estimated probabilities lie between the logical limit of 0 and 1. Due to these advantages, the Logit and the Probit models are the most frequently used models when the dependent variable happens to be dichotomous [61], [62] and [63]. The main difference between the Logit and Probit is in the nature of their distribution which is captured by cumulative distribution function (CDF). In this study, the logistic regression model is selected because it has been widely used by many researchers and most importantly because of its comparative simplicity, convenience, flexibility and a powerful estimator of models [64].

Following [59], [62] and [33], the cumulative logistic probability model is econometrically specified as:

$$P_i = F(Z_i) = F\left(a + \sum_{i=1}^n \beta_i X_i\right) = \frac{1}{1 + e^{-Z_i}} \dots \dots \dots (4)$$

Where,

P_i = is the probability that an individual access credit given X_i .

X_i = represents the i^{th} explanatory variables

e = represents the base of natural logarithms, which is approximately equal to 2.718

α = constant terms

β_i = coefficient of independent variables to be estimated

Central to the use of logistic regression is the Logit transformation of P given by Z . That is, to obtain linearity, the natural logarithms of odds ratio equation (4) is taken, which results in the Logit model as given by:

$$Z_i = \ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_n X_{in} \dots \dots \dots (5)$$

Where Z_i is the indicator of agribusiness entrepreneur access to credit or not, P is the probability of the events occurrence, X_i is a vector of household socio-economic, demographic, firm characteristics, and factors characteristic of financial institutions.

3.4 Specification of empirical model:

In this study, ‘access to credit’ refers to those respondents who were able to receive credit from a lending institution. This takes a dichotomous response variable of ‘yes’ and ‘no’ for those who had credit and those who did not respectively. The access to credit by agribusiness SME’s can be formulated implicitly as:

Agri – SME Credit Access

$= f(\text{socioeconomic characteristics, management characteristics, firm characteristics, Institutional factors})$

The Logit Model can therefore be specified as:

$$\begin{aligned} \text{Credit access} = & \beta_0 + \beta_1 \text{Age} + \beta_2 \text{Gender} + \beta_3 \text{EducL} + \beta_4 \text{YBExp} + \beta_5 \text{OIncome} + \\ & \beta_6 \text{MBOrg} + \beta_7 \text{FirmSize} + \beta_8 \text{GMSales} + \beta_9 \text{Colattsec} + \beta_{10} \text{CrdtSkill} + \beta_{11} \text{MgtRec} + \\ & \beta_{12} \text{BRegist} + \beta_{13} \text{ProxFI} + \beta_{14} \text{CrdtExp} + \mu_i \dots \dots \dots (6) \end{aligned}$$

Table 1: Description of Variables used in Regression of Access to Credit by Agri-SME’s

Variable	Frequency	A Priori
<i>Age</i>	Age of agribusiness entrepreneur (yrs)	+/-
<i>Gender</i>	Sex of respondent 1=male; 0=female	+
<i>EducL</i>	Educational status/years of schooling (yrs)	+
<i>YBExp</i>	Years of experience in business (yrs)	+
<i>OIncome</i>	Other source of income 1=yes; 0 = no	+

<i>MBOrg</i>	Membership of business association 1=yes; 0 = no	+
<i>FirmSize</i>	Firm size measured by number of hired employees	+
<i>GMSales</i>	Estimated Gross Monthly Sales (GH¢)	+
<i>Colattsec</i>	Availability of securable collateral 1 = yes; 0 = no	+
<i>CrdtSkill</i>	Credit management skill of respondent 1 = good ; 0 = not good	+
<i>MgtRec</i>	Ability to keep management records 1=yes; 0 = no	+
<i>BRegist</i>	Registration status of business 1 = registered ; 0 = otherwise	+
<i>ProxFI</i>	Proximity to financial institution 1 = close; 0 = far	+
<i>CrdtExp</i>	Years of banking or credit with FI measured in yrs	+
μ_i	Error term	

4. RESULTS AND DISCUSSION

4.1 Credit Experience, Status and History of Agri-SME Operators

The summary of credit experience and status of respondents is presented in Table 2. The study showed that the major credit need for most of the respondents was working capital 81 (61.8%), business expansion 28 (21.4%) and as a start-up capital 15 (11.5%). All the Agri-SMEs operated as sole proprietors who typically require funds to take care of routine operational activities hence the high demand for working capital loans. All the respondents indicated that they had business relationship with or patronized some financial services or products offered by the formal and semi-formal financial institutions. Most of the Agri-SME operators either banked with the RCB–Rural Community Banks (29.1%) or the SLC–Savings and Loans Company (25.8%). Also 22.5% dealt with the UB–Universal Banks whiles 6.6% banked with Micro-Finance Companies. The relatively high preference for the services of RCB’s and SLC’s in a typical cosmopolitan area suggest and gives an indication of the growing importance of these financial institutions in the country as far as SME financing is concerned. Although all the 151 respondents had enjoyed some form of banking services, only about 55% stated that they had ever applied for a loan before, from the formal financial sector. The results again revealed that contrary to popular assertion most respondents 70 (66.7%) stated that the financial institutions did not strictly demand collateral security whiles 35 (33.3%) indicated that collateral security was required. This results is not surprising given the fact that some SLCs and RCBs with a growing presence and competition in the urban Ghana appear to lay much emphasize on relationship and bank transactional history of clients compared to the universal banks where collateral security is a major requirement. Furthermore, when the respondents were asked to state whether they were

able to meet loan application requirements apart from the usual demand for collateral security, 12% indicated they were *always* able to, 67% *stated* *sometimes* and about 21% said *not at all*. Credit management is important for many business operators who require especially formal credit. When respondents were asked to rate their skills in credit management, 87 (57.6%) rated it as *good* while 64 (42.4%) stated it was not good. Finally, the survey showed that a fairly good number of respondents 80 (53%) declared they had access to credit while 47% stated otherwise. And for those who have ever attempted applying for credit, a little above average (53.8%) were of the view that loan application was cumbersome while 46.2% stated otherwise.

Table 2: Summary of Credit Experience and Status of Agri-SME's in the Metropolis

VARIABLE	FREQUENCY	PERCENTAGE (%)
Primary Credit Needs		
Working Capital	81	61.8
Start-up capital	15	11.5
Inventory/Stocks	4	3.1
Capital/Assets	3	2.3
Business Expansion	28	21.4
Form of Business Status		
Sole proprietorship	151	100
Partnership	0	0
Limited Liability Company	0	0
Source of Financial Services		
Universal Banks	34	22.5
Savings and Loans	39	25.8
RCB	44	29.1
Credit Union	1	.7
MFI	10	6.6
Others	23	15.2
Credit Application History		
Yes	83	55.3
No	67	44.7
Collateral Demands from Lenders		
Yes	35	33.7
No	70	66.7
Able to Meet Requirements		
Always	11	12.1
Sometimes – partly	61	67
Rarely – Not all at all	19	20.9

Loan Application Process		
Simple	61	46.2
Cumbersome	71	53.8
Credit Management Skills		
Good	87	57.6
Not Good	64	42.4
Access to Credit		
Yes	80	53.0
No	71	47.0

Source: Field Survey, 2014

4.2 Logistic Analysis of Factors that Influence Access to Credit by Agri-SME Operators

The Logistic regression model was employed to analyze the factors that affect access to credit by Agri-SME operators in the Kumasi Metropolis. Results from the regression analysis indicate that the goodness of fit of the logistic model tested by means of the Log-Likelihood Ratio show a 1% level of significance. Out of the 14 explanatory variables, six namely (other income, membership of business organization, firm size, borrower/credit experience, collateral security, and credit management skills) were found to be statistically significant determinants on credit accessibility. Membership of a business organization significantly improved Agri-SME operators' access to credit at 10% level. It is most likely that those business organizations that are well structured, functional, vibrant and credible are able to link up members to credit sources, and thus enhance credit accessibility. Credit experience of Agri-SME operators also had a positive and significant influence on credit access at 1% level. Similarly credit management skill of Agri-SME operators and their ability to present valuable collateral security were significant and positively related to access to credit at 5% probability level. All these three variables (credit experience of borrower, credit management skills and collateral security) and their outcomes in this study corroborate the findings of Fatoki and Assah [40], Herrington and Wood [41], Kohli [43], Abor and Quartey [48], and Eastwood and Kohli [44]. Similarly membership of business organization also positively influenced access to credit and this is in tandem with the findings of Kiplimo [33]. It is most likely that business organization or groups offer network opportunities, information or even some leverage to source for and access credit.

Most formal financial institutions place some level of premium on client relationship, credit and financial management skill of clients and their ability to provide valuable collateral security. These attributes or variables have always played an important role and facilitated ease of credit

access from the formal sector, as exhibited in this study. It was expected that agribusiness operators who had other sources of income would be in a better position to access credit from the formal financial institutions, however, results from analysis showed that the variable rather had a negative relationship with the dependent variable. It is probable that business operators earning income or revenue from other activities may not be financially constrained as to warrant external financing, hence the negative impact on credit access. The study also revealed that firm size though significant at 10%, negatively influenced credit access by Agri-SME operators. This finding is contrary to the assertion of Kholi [43] and Burkhart and Ellingsen [46], all of who indicated that large firms have relatively easy access to credit than smaller firms. Indeed it is not surprising that this variable negatively influenced credit access as most of the Agri-SMEs had on average staff strength of about three persons.

On the other hand, none of the socio-economic variables included in the analysis had any significant impact or influenced the ability of Agri-SME operators to access credit. The coefficients of variables such as the gross monthly sales, proximity to financial institution, years of business experience and proximity to financial institution were not statistically significant on access to credit and thus contrary to literature and some empirical evidence. It is most likely that although some financial institutions demand collateral security, their decision to approve credit fell short of determining the value of these assets. Similarly it is most likely that the financial institutions did not consider or make lending decision based on gross monthly sales of loan applicants probably because those data could not be verified. Rather, the banks depended more on the relationships they had with their customers' vis-à-vis borrowing experience and credit management skills.

Table 3: Logistic (Marginal effect) Regression Results of the Factors Influencing Credit Access to Agri-SME Operators

							Number of obs = 102
							LR chi2(14) = 67.11
							Prob > chi2 = 0.0000
							Pseudo R ² = 0.5356
							Log likelihood = -29.088872
Variable	Marginal Effect	Coef.	Std. Err.	Z	P> z	95% Conf. Interval	
Age	-0.00142	-0.01546	0.039554	-0.39	0.696	-0.09298	0.06206
Gender	0.03635	0.39451	0.73425	0.54	0.591	-1.04459	1.83362
EducL	0.01515	0.16442	0.36795	0.45	0.655	-0.55676	0.88559

BRegist	-0.09513	-1.03256	0.98689	-1.05	0.295	-2.96682	0.90171
OIncome	-0.13789	-1.49666	0.88048	-1.70	0.089*	-3.22237	0.22906
MBorg	0.17524	1.90205	1.10792	1.72	0.086*	-0.26944	4.07354
YBexp	-0.00152	-0.01647	0.05726	-0.29	0.774	-0.12871	0.09577
Firmsize	-0.03851	-0.41802	-0.23662	-1.77	0.077*	-0.88175	0.04579
GMsales	-0.00002	0.00021	-0.00018	-1.13	0.259	-0.00057	0.00015
MgtRec	-0.09626	-1.04475	0.84876	-1.23	0.218	-2.70830	0.61880
ProxiFi	0.05469	0.59363	0.91713	0.65	0.517	-1.20392	2.39118
CrdtExp	0.10891	1.18206	0.35270	3.35	0.001***	0.49078	1.87334
Colattsec	0.30174	3.27502	1.49707	2.19	0.029**	0.34080	6.20923
CredSkill	0.17189	1.94944	0.88610	2.20	0.028**	0.21272	3.68616
Const		-1.41213	1.65883	-0.85	0.395	-4.66337	1.83911

*Significant at 10%; ** Significant at 5%; and * ** Significant at 1%

4.3 Constraints in Loan Application Process for Agri –SME’s in the Metropolis

Agribusiness operators, like most **SMEs** have peculiar constraints in the loan acquisition process. In this study, the respondents were asked to rank in order of importance or severity the most constraining factors that affect their credit request or loan application with their bankers, mostly formal credit sources. Out of the total of 151 Agri-SME operators involved in the survey, between 74 and 111 responded to the various issues of credit constraints. The results as presented in Table 4 show that about 88% and 57% of respondents ranked *high interest rate* and *unfavorable loan term* as the first and second most severe constraints respectively. This was followed by *adequate amounts of loan amount (50%)*. Next a Kendall Coefficient of Concordance Test (W), showed that there was a significant difference at 1% level between the rankings of the constraints encountered by respondents. The results of the analysis as presented in Table 5, revealed that high interest rate was ranked topmost with a mean rate of 1.47, followed by inadequate loan amount at 2.98 and unfavorable loan term with a mean of 3.13. Lastly, the respondents perceived that the issue of cumbersome loan application procedures was the least severe among the lot.

Table 4: Percentage Distribution of Constraints to Loan Application

Variable	Percentage Ranking	Ranking
High Interest rate	88.30%	1
Unfavorable term of loan	57.00%	2
Inadequate loan amount	50.00%	3
Delayed loan disbursement	35.40%	4
Cumbersome procedures	25.50%	5

Table 5: Rankings of Constraints Kendall's (W) in Loan Application Process

Constraints	Mean Rank
High interest rate	1.47
Unfavorable term of loan	3.13
Inadequate loan amount	2.98
Delay loan disbursement	3.53
Cumbersome procedures	3.88

Test Statistics: N=30, df = 4; $\chi^2 = 42.048$; and $P < 0.000$

5 CONCLUSIONS AND RECOMMENDATION

The study was carried out to identify the factors that determine access to credit for Agri-SME operators in the Kumasi Metropolitan Area of Ghana. The study revealed that Agri-SMEs in the study area have a relatively good credit history or status, with all the respondents patronizing one form of financial services or the other, particularly from the Rural and Community Banks, Savings and Loans Companies and Universal Banks. The most important or prevalent credit need for most respondents was working capital loans, although only about 53% were able to access such credit. The logistic regression analysis from one hundred and fifty one respondents showed that credit access was significantly determined or influenced by six variables namely extra income earned by respondents, firm size, borrower experience, credit management skills, and possession of collateral security. Contrary to expectation however, factors such as years of business experience of Agri-SME operators, proximity to financial institution and gross monthly sales were insignificant and did not influence access to credit.

Finally, the study revealed that factors that influence access to credit by Agri-SME operators were similar to those in the mainstream small business sector (or non-agricultural related

businesses). Agri-SME operators should be encouraged to build on credit history and experience by banking with the formal sector for the variety of services they provide. They should also be encouraged to join well-functioning business organizations which can offer a platform for business networking and linkage to financial services and also for the development of credit management skills. Financial institutions on the other hand especially from the formal sector should increase engagement with the Agri-SME operators to improve relationship and credit experience of clients by employing innovative means for credit accessibility.

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