

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's operators in the Kumasi Metropolis, of the Ashanti Region of Ghana.

Study Design: The study used a multi-stage sampling technique – purposive and random sampling 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 more than 4.5 million people and has a large SME sector especially in the informal sector.

Methodology: Both qualitative and quantitative methods were employed to analysis 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 join or belong to business organizations and also strengthen such associations. Agri –SME operators should be encouraged to build on credit skill by engaging more with financial institutions and strengthen relationship as a means to enhance credit access. Financial institutions, especially the RCB’s and SLC’s should strive to offer more competitive rates to Agri-SME’s that apply for credit as a group.

Key words: Credit Access, Agri-SME’s, 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 very critical and worth considering. Across the advanced world and developing countries, the small and medium enterprises (SME’s) sector, including Ghana’s Agri-SME’s, 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 access to finance adversely affect the growth of the SME sector more than that of large companies [7]; [8]; [8], [9],[10]. Indeed it has been established that, access to credit is a major determinant of competitiveness within the agribusiness sector. For many agribusinesses and their value chain actors, access to credit can facilitates 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, donors and government 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 rudimental 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 sectors 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-SME's 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 (35%) 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 SME's 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 typical agribusiness operators. These demand side and credit side constraints has 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 resort to informal sources of credit to finance their businesses. Unfortunately informal credit services often come with its own

constraints of unreliability, inefficient, exorbitant interest charges, and very expensive [23]. According to the International Finance Corporation, 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, the [25] has indicated that access to credit for Agri-SME's is as challenging as it is for upstream production activities that usually occur at the rural and farm level. This study therefore attempts to ascertain and thus shed more light on the credit access situation for Agri-SME operators, specifically those operating at off-farm agribusinesses sectors of the agricultural value chain.

Whereas there is ample empirical evidence of credit market situation for smallholder farmers and primary production activities for various agricultural commodities, very little can be shown for Agri-SME financing from the formal financial sector and the factors that influence access to credit by these Agri-SME's. 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 trust of this paper therefore is to investigate the factors that influence access to credit by Agri-SME's 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.

Whiles 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-SME's 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 [25]. 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 including 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 percent 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 percent 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 service providers play an important role in addressing the lack of access for many clients outside to 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. **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 SME's 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 whiles 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

185 managerial competencies of SME operators greatly influence ease of credit access and vice–
186 versa [40] and [41].

187 In another study in Limpopo, South Africa [42] found that loan repayment periods, risk and
188 uncertainty, distance between borrower and lender, and business experience of borrower were
189 significant but negatively influenced credit access. [38] showed that access to credit by SME's
190 improved with registration of SME's, record keeping and the educational level of entrepreneur.
191 [43] and [44] in a study of enterprise access to credit in India, showed that the firm size, age, and
192 collateral security of enterprise had positive and significant influence on access to bank loans.

193 **2.2 Firm-specific characteristics** for Agri-SME's as with mainstream SME's also influence
194 credit access. Financial institutions consider and are more likely to use firm size (proxied by
195 employee numbers in some cases) as a criterion for lending [43]. This is because large firms tend
196 to be more diversified and less prone to failure [44] and are most often endowed with more real
197 assets which enable them to attract long term debt than smaller firms [45]. The availability of
198 fixed assets by firms also serves as collateral security which offers borrowers with high financial
199 leverage to secure credit facilities [46]. Firms with more secured and valuable collateral security
200 therefore present better chances of accessing credit than their less endowed counterparts [47].
201 [48] also showed that assets accumulation or value of assets though significant, it negatively
202 influenced credit access in the study area. The geographic proximity or distance between banks
203 and customers has a relationship on a firm's use of leverage [42], because it allows banks for
204 instances to assess, evaluate and monitor clients at least cost and more efficiently. The number of
205 years of a firm has been in operation also has an impact of access to credit. Thus Agri-SME's
206 with long years of operation would have developed or built business operational capacities and
207 experiences including–management, financing, marketing, that are more likely to make them

208 more resilient and attractive to the formal sector compared to much younger firms [49] ; [50]
209 [51] and [52].

210 **2.3 Financial institutions**, which are at the suppliers of financial services or credit have peculiar
211 characteristics which can impact on the availability or otherwise of credit to borrowers. These
212 institutional factors have been identified to include conditions like operating an account with the
213 financial institution may give an indication credit management capacity of borrower. Similarly
214 the number of years of operating an account with the financial institution builds some level of
215 relationship between lender and borrower, and thus enhances credit access. The ability of firm to
216 keep proper accounts records including financial statement signifies some level of management
217 capacity thereby reducing information asymmetry problems and also builds the level of
218 transparency from the lenders perspective [53] and [54].

219

220 **3.0 METHODOLOGY**

221 **3.1 Study Area and Location**

222 The study was conducted Kumasi, which is located in the Ashanti Region of Ghana. Kumasi the
223 second largest city of Ghana and as a typical cosmopolitan area, it depicts a fair share of vibrant
224 economic activity, particularly trade and businesses within the informal sector. The vibrancy of
225 economic activity is demonstrated by the huge presence and dominance of the small and medium
226 enterprises, of which Agri-SME's are well represented. The Ashanti Region lies between
227 longitude 0° 15'W– 2° 15' and latitude 6° N– 7° 30'N of the equator. The region has a population
228 of about 1,208,226 located in the transitional forest zone and is about 270km north of the
229 national capital, Accra. The strategic location of the region, somewhat between in the middle of

230 Ghana, and diving the south from the northern sector makes it a typical choice area for this kind
231 of study.

232 **3.2 Sampling Technique and Data Collection**

233 A multistage technique was used to select some 150 respondents for the study. In particular food
234 processors, agri-food marketers, and agro-input dealers (both plant and animals) were
235 purposively selected for the survey as they are quite dominant within the agribusiness operators
236 in the study area, particularly within the urban (central business district of Adum and Kejetia
237 market) and peri-urban metropolitan area. The second stage involved a random selection of
238 individual respondents. Data was collected using well structured, mostly close ended
239 questionnaires that captured information on the socio-economic and firm characteristics of as
240 well credit history of the respondents.

241 **3.3 Analytical Framework and Model Specification**

242 Decision by an entrepreneur to access credit is influenced by a number of factors and
243 considerations. Decision and choice model of this nature usually involves the use of an
244 appropriate utility maximization approach, logistic regression model. The logistic regression
245 model was employed to determine the factors that influence an entrepreneur's ability to access
246 credit from formal financial sector. Logistic regression is particularly useful where the dependent
247 variable, in this case access to credit, is dichotomous. In this analysis, Y_i represent an
248 entrepreneur's decision to access or not to access credit from the financial institution. Y_i is
249 assumed to be dependent on a vector of individual an socio-economic, as well as institutional
250 factors (X_i). The relationship between the dependent and explanatory variables is stated as:

$$251 \quad Y_i = \alpha + \beta'X_i + \mu_i \dots\dots\dots(1)$$

252 If Y_i , is the random variable (dichotomous) then it can be assumed that Y_i takes on the value of
 253 1 or 0. The decision of the operator to access credit is informed by the marginal cost and benefit
 254 he or she expects to derive from the use or otherwise of the credit. However, practically speaking
 255 the marginal utility (cost and benefit) is not observed, thus equation (1) cannot be estimated. The
 256 observation can only be derived from the responses made by the respondents in the survey. Thus,
 257 another variable is introduced to capture the reality of the use or non-use of credit as Y_i^* , such
 258 that:

$$259 \quad Y_i^* = \begin{cases} 1 = & \text{if respondent was able to access credit from formal sector} \\ 0 = & \text{if respondent did not access credit from formal sector} \end{cases} \dots\dots\dots(2)$$

260 Thus

$$261 \quad Y_i^* = \alpha + \beta^i X_i + \mu_i \dots\dots\dots(3)$$

262 Though in the analysis of data involving binary choice models, three commonest approaches
 263 such as the Linear Probability Model (LPM), the Logit and the Probit Models, are possible,
 264 several research analysts have settled for the latter two. The Logit and Probit models according
 265 to [55] and [56] are preferred because of their similarity and most importantly avoid the
 266 limitations associated with the LPM, where the estimated probabilities can lie outside 0-1 [57].

267

268 According to [59] both the Logit and Probit are non- linear models and are estimated using
 269 maximum likelihood (ML) method. In addition, [60] noted that both Logit and Probit models
 270 guarantee that the estimated probabilities lie between the logical limited of 0 and 1 . Due to these
 271 advantages, the Logit and the Probit models are the most frequently used models when the
 272 dependent variable happens to be dichotomous [61], [62] and [63] and [64]. The Logit and Probit
 273 models are quite similar in most applications. The main difference between the two is in the

274 nature of their distribution which is captured by cumulative distribution function (CDF. In this
 275 study, the logistic regression model is selected because it has been widely used by many
 276 researchers and most importantly because of its comparative simplicity, convenience, flexibility
 277 and a powerful estimator of models [65].

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

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

280 Where,

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

282 X_i = represents the i^{th} explanatory variables

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

284 α = constant terms

285 β_i = coefficient of independent variables to be estimated

286 Central to use of logistic regression is the Logit transformation of p given by Z . That is, to get
 287 linearity, the natural logarithms of odds ratio equation (1) is taken, which results in the Logit
 288 model as given by:

$$Z_i = \ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n \dots \dots \dots (5)$$

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

292

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 (Socio-economic characteristics, Management characteristic, Firm characteristics and Institutional factors). The Logit Model can therefore be specified as:

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

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>MBOrg</i>	Membership of business association 1=yes; 0 = no	+
<i>YBExp</i>	Years of experience in business (yrs)	+
<i>GMSales</i>	Estimated Gross Monthly Sales (GH¢)	+
<i>MgtRec</i>	Ability to keep management records 1=yes; 0 = no	+
<i>ProxFI</i>	Proximity to financial institution 1 = close; 0 = far	+
<i>OIncome</i>	Other source of income 1=yes; 0 = no	+
<i>BRegist</i>	Registration status of business 1 = registered ; 0 = otherwise	+
<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>CrdtExp</i>	Years of banking or credit with FI measured in yrs	+
<i>FirmSize</i>	Firm size measured by number of hired employees	+

4. RESULTS AND DISCUSSION

4.1 Credit Experience, Status and History of Respondents

The summary of credit experience and history of respondents is presented in Table 2. The major credit need for most of the respondents was working capital 81 (61.5%), business expansion 28 (21.4%) and as start-up capital 15 (11.5%). All the Agri-SME's 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 and 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%), with about 22.5% dealing with the UB–Universal Banks and 6.6% banking with Micro-Finance Companies. The others (15.2%) sourced credit from 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, either from the formal or semi-informal sector 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 collateral security was required. This results is not surprising given the fact that some SLC's and well as RCB's which have become dominant appear to lay much emphasize on relationship and bank transactional history compared to the universal banks. Next, when the respondents were asked to state whether they were able to meet loan application requirements apart from collateral security about 12% indicated they were *always* able to, 67% indicated *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 own skills in credit management, 87 (57.6%) were positive about their credit skills whiles 64 (42.4%) stated it was not good. The results also showed that 80 (53%) of the respondents declared they had access to credit whiles 47% stated they did not have access. However, in the view of about 53.8% of the Agri–SME operators surveyed the loan application procedures were cumbersome whiles 46.2% indicated it was simple.

342

343 **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
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		
No	67	44.7
Yes	83	55.3
Collateral Demands from Lenders		
Yes	35	33.7
No	70	66.7
Able to Meet Requirements		
Always	11	12.1
Sometimes	61	67
Rarely – Not all	19	20.9
Loan Application Process		
Simple	61	53.8
Cumbersome	71	46.2
Credit Management Skills		
Good	87	57.6
Not Good	64	42.4
Access to Credit		
No	71	47.0
Yes	80	53.0

344 Source: Field Survey, 2014

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349 **4.2 Logistic Analysis of Factors that Influence Access to Credit by Agri-SME Operators**

350 The Logistic regression model was used to analyze the factors that affect access to credit by
 351 Agri-SME operators in the Kumasi Metropolis. Results from the regression analysis indicate that
 352 the goodness of fit of the logistic model tested by means of the Log-Likelihood Ratio show a 1%
 353 level of significance. Out of the 14 explanatory variables, six namely (other income, membership
 354 of business organization, firm size, borrower/credit experience, collateral security, and credit
 355 management skills) were found to be statistically significant determinants of credit accessibility.
 356 Belonging to a business organization significantly improved Agri-SME operators' access to
 357 credit at 10% level. It is most likely that those business organizations that are well structured,
 358 functional, vibrant and credible are able to link up members to credit sources, and thus enhance
 359 credit accessibility. Credit experience of Agri-SME operators had a positive and statistically
 360 significant influence on credit access at 1% level of probability. Similarly credit management
 361 skill of Agri-SME operators and their ability to present valuable collateral security were
 362 significant and positively related to access to credit at 5% probability level. All these three
 363 variables (credit/borrower experience, credit management skills and collateral security) and their
 364 outcomes in this study corroborate the findings of [43]; [44]; [47] and [48].

365

366 Most formal financial institutions place some level of premium on client relationship, credit and
 367 financial management skill of clients and their ability to provide valuable collateral security.
 368 These attributes or variables have always played an important role and facilitated ease of credit
 369 access from the formal sector, as exhibited in this study. It was expected that operators who had
 370 other sources of income would be in a better position to access credit from financial institutions,
 371 however, results from analysis showed that the variable rather had a negative relationship with
 372 the dependent variable. It is probable that business operators earning income or revenue from
 373 other activities may not be financially constrained as to warrant external financing, hence the
 374 negative impact on credit access. This study also showed that firm size though significant at
 375 10%, negatively influenced credit access by Agri-SME operators. This finding is contrary to the
 376 assertion of [40]; [16] all of who have indicated that large firms have relatively easy access to
 377 credit than smaller firms. Indeed it is not surprising that this variable negatively influenced credit
 378 access because most of the Agri-SME's had on average staff strength of about three.

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. The coefficients of variables such as the gross monthly sales, value of business assets, years of business experience and proximity to financial institution were not found to be statistically significant factors at influencing 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 the financial institutions did not consider or make lending decision based on monthly sales probably because those data could not be verifiable. 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
<i>OIncome</i>	<i>-0.13789</i>	<i>-1.49666</i>	<i>0.88048</i>	<i>-1.70</i>	<i>0.089</i>	<i>-3.22237 0.22906</i>
<i>MBorg</i>	<i>0.17524</i>	<i>1.90205</i>	<i>1.10792</i>	<i>1.72</i>	<i>0.086</i>	<i>-0.26944 4.07354</i>
YBexp	-0.00152	-0.01647	0.05726	-0.29	0.774	-0.12871 0.09577
<i>Firmsize</i>	<i>-0.03851</i>	<i>-0.41802</i>	<i>-0.23662</i>	<i>-1.77</i>	<i>0.077</i>	<i>-0.88175 0.04579</i>
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
<i>CrdtExp</i>	<i>0.10891</i>	<i>1.18206</i>	<i>0.35270</i>	<i>3.35</i>	<i>0.001</i>	<i>0.49078 1.87334</i>
<i>Colattsec</i>	<i>0.30174</i>	<i>3.27502</i>	<i>1.49707</i>	<i>2.19</i>	<i>0.029</i>	<i>0.34080 6.20923</i>
<i>CreditSkill</i>	<i>0.17189</i>	<i>1.94944</i>	<i>0.88610</i>	<i>2.20</i>	<i>0.028</i>	<i>0.21272 3.68616</i>
Const		-1.41213	1.65883	-0.85	0.395	-4.66337 1.83911

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

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397 **4.3 Constraints in Loan Application Process for Agri –SME’s in the Metropolis**

398 Agribusiness operators, like most SME’s have peculiar constraints in the loan acquisition
 399 process. In this study, the respondents were asked to rank in order of importance or severity the
 400 most constraining factors that affect their credit request or loan application with their bankers,
 401 mostly formal credit sources. The results as presented in Table 4 show that about 88% of
 402 respondents ranked *high interest rate* on loan cumulatively as the number 1 and 2 most severe
 403 constraints. This was followed by the *terms of loan* (57%) application including duration,
 404 repayment schedules and then *adequate amounts of loan amount* (50%). Next a Kendall
 405 Coefficient of Concordance Test (W), showed that there was a significant difference at 1% level
 406 between the rankings of the constraints encountered by respondents. The results of the analysis
 407 as presented in Table 5, revealed that high interest rate was ranked topmost with a mean rate of
 408 1.47, followed by inadequate loan amount at 2.98 and unfavorable loan term with a mean of
 409 3.13. Lastly, the respondents perceived that the issue of cumbersome loan application procedures
 410 was the least severe among the lot.

411 **Table 4: Percentage Distribution of Top Two most Important Constraints to Loan Application**

Variable	Percentage Ranking
Rank High Interest rate	88.30%
Rank Unfavorable term of loan	57.00%
Rank Inadequate loan amount	50.00%
Rank Delayed loan disbursement	25.50%
Rank cumbersome procedures	35.40%

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413 **Table 5: Rankings of Constraints Kendall’s (W) in Loan Application Process from Formal Sector**

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

Rank Cumbersome procedures	3.88
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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-SME's in the study area were split between male and females, were mostly married and had a relatively good educational background. Almost all the respondents enjoyed some form or level of financial services with the formal financial institutions particularly Rural and Community Banks, Savings and Loans Companies and Universal Banks. 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, value of business assets and gross monthly sales were insignificant and did not influence access to credit.

The study revealed that factors that influence access to credit by Agri-SME operators were similarly to those in the mainstream (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 belong to well functioning business organizations which can be a platform for linkage to financial services as other business development 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 employing innovative means of credit requirements.

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