IJFAEC
International Journal of
Food and Agricultural Economics

AN ANALYSIS OF ACCESS TO CREDIT MARKETS AND THE PERFORMANCE OF SMALL SCALE AGRO- BASED ENTERPRISES IN THE NIGER DELTA REGION OF NIGERIA

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Abstract

The study was designed to examine access to credit markets and performance by small scale agro-based enterprises in the Niger Delta. A multistage sampling technique was adopted in selecting 264 and 96 agro-based enterprises that accessed informal and formal credit respectively through the use of structured questionnaire and oral interview. The logit model was used to examine the factors that had significant influence on credit access by the enterprises in the region. Results revealed that the factors that significantly influence informal credit access by small scale agro-based enterprises are Gender, Age and Social Capital, while factors that influence formal credit access are Education, Age, Enterprise size and Collateral. Majority of enterprises accessed informal credit but the few that accessed formal credit performed better. Government should ensure easy access to formal finance by small agro-based enterprises in the region as they are the engine of economic development.

Key Words: *Informal Credit; Formal Credit; Credit Access; Small Scale Agro-based Enterprises; Niger Delta Region; Nigeria.*

1. Introduction

Credit enables individuals to smooth out consumption in the face of varying incomes, provides income for investment and improves ability to cope with unexpected expenditure shock (Atieno, 2009). Access to these external resources is needed to ensure flexibility in resource allocation and reduce the impact of cash flow problems (Bigsten *et al*, 2003). Firms with access to funding are able to build up inventories to avoid stocking out during crises, while the availability of credit increases the growth potential of the surviving firms during periods of macroeconomic instability (Atieno, 2009). Firms without access to bank funding are more vulnerable to external shocks as the lack of access to credit remains a major constraint for the business managers in developing economies (Nkurunziza, 2005).

In this regard, policy makers have held the conception that micro and small scale firms in developing countries lack access to adequate financial services for efficient inter-temporal transfers of resources and risk coping (Besley, 1995). Without well-functioning financial markets, small scale firms may lack much prospects for increasing their productivity in many significant and sustainable ways (Nwaru, 2004). Based on these reasons, and the fact that

traditional commercial banks typically have minimum interest in lending to small scale enterprises due to their lack of viable collateral and high transaction costs associated with the small loans that suit them, most developing country governments, have set up credit programs aimed at improving access to credit (Arene, 1993; CBN, 2010).

Efforts targeted at small businesses are based on the premises that they are the engine of economic development, but market and institutional failures impede their growth, thus justifying government interventions (Gomez, 2008). However, the failure of government supported financial institutions is a convincing evidence of the need for a better understanding of how these firms in the Niger Delta, often operating in highly risky environment insure against risk and conduct their inter-temporal trade in the absence of well-functioning financial markets (Ministry of Niger Delta Affairs, 2011). In response to these failures and in recognition of the critical role that credit can play in alleviating poverty in a sustainable way, innovative credit systems are being developed and promoted in Nigeria as a more efficient mechanism of improving micro and small scale firms' access to credit (CBN, 2010).

Central Bank of Nigeria (2005) noted that the formal financial system provides services to about 35% of the economically active population while the remaining 65% are excluded from access to financial services. According to the apex financial body, these 65% are often served by the informal sector through NGO-MFIs, friends, relations and credit unions. The failure of formal financial sector in most developing economies as in Nigeria to serve the poor, has forced majority of rural farmers to rely on informal finance sources (Musinguzi & Smith, 2000; Fraslin, 2003; Udoh, 2005). Informal finance have played very significant role in agricultural financing than formal finance since it is closer to the people. Aleem (1990) argue that informal lenders mainly use the established relationship with borrowers as a screening and credit rationing mechanism. However, informal credit, though accessible, is not adequate for meaningful production. This inefficient nature of the credit market presupposes the lack of adequate information relating to empirical issues on credit access and performance most especially in post conflict Niger Delta.

It has been observed that small scale enterprises have performed at very abysmal level (Hassan & Olaniran, 2011). This low performance has exacerbated poverty, hunger, unemployment and low standard of living of people in a country whose economics is ailing (Hassan & Olaniran, 2011). Considering the emergence of many formal and informal financial institutions in the Niger Delta, there is hope for small Agro-based enterprises as they could complement the amnesty programme of the federal government of to ex-militants and others who did not carry arms but are affected by the grave economic condition of the area. But, to what extent has credit advanced to these enterprises in the region influenced performance? Assessment of the influence of financing is popular, but lacking among small agro based enterprises in a post-conflict context. Therefore, attempt to formulate credit policies without substantial information on how agro-based firms respond to the different credit sources in the market, how they perform with these credit sources, and the factors militating against their response in a region such as the Niger Delta may be deficient since it is not backed by empirical evidence.

Based on the need to efficiently increase production with a view to meeting the economic and financial needs of the people of post conflict Niger Delta, Nigeria, and the increasing importance of credit in financing SMEs in the region, this study seeks to examine the accessibility to credit and the Performance of Small Scale Agro based Enterprises in the Niger Delta Region of Nigeria.

2. Theoritical Framework

This study examines the deterministic response and behavior of small scale Agro-based enterprises in the credit market, building on the theoretical frameworks of Stiglitz and Weiss (1981), Kochar (1997), and Bigstein *et al* 2003. It is assumed there are many agro small scale enterprises trading for profit maximization. Thus, firm's instantaneous utility derived from profit is given by U (π_i). Based on risk aversion where U'(π_i)>0 and U" (π_i) <0, and that firms maximize expected utility at given period with θ as the rate of preference or risk diversion. The expected utility is:

$$E (1/1+ \theta)^i U(\pi_i)$$ (1)

Given this prime objective of Medium and Small Scale Enterprises (MSEs), we let π_i denote enterprise i profit which is function of the difference between revenue from sales and costs. Thus:

$$\pi_i (p, q) = R_i(P_r, q) - C_i(P_c, q)$$ (2)
$$R'_{ipr} (P_r, q) > 0, R'_{iq}(p_r, q) > 0, C'_{ipr} (P_r, q) < 0, C'_{iqr} (P_r, q) > 0$$

Where $R_i(P_r, q)$ represents revenues and $C_i(P_c, q)$ denotes costs. The components P_r and P_c in model (2) are prices of small scale outputs and inputs, respectively. Both revenue and costs are functions of quantity (q) and Price (p). Given the nature of the products, small scale agrobased enterprises are vulnerable to competitive market changes and usually faced with uncertainty of demand or market uncertainty which makes it difficult to determine market demand for their products, access credit or repay loan. Demand uncertainty for products of enterprise *i* can be represented by an inverse demand function given as:

$$P_i(q_i) = \bar{P} (q_i) + \varepsilon_i$$ (3)

Where $\bar{P} (q_i)$ is the deterministic part of the inverse demand function.

From model (2), the costs, $C_i(P_c, q)$ of producing output (q) Can be extended further to include costs of credit application and waiting costs, credit charges collected by the lender beyond interest (application and services charges, bribes, travel expenses) which are all assumed to be combined and denoted as $c(A)$. In the absence of any credit cost which is almost unlikely for many small scale enterprises in the Niger Delta(ministry of Niger Delta Affairs, 2011), the profit of Small Scale Agro-based Enterprises(SSAEs) is equal to gross operating surplus which is the difference between revenue and labor cost. Assuming the entire $C_i(P_c, q)$ to initiate or expand investment of enterprises is based on credit from financial institutions, profit by the enterprises i is equivalent to market return R$i(p,q)$, less credit payments $(1+r)B_i$ and cost of credit application, $c(A)$. Where B_i denotes total amount borrowed, A_i is credit application and r_i Is the interest rate.

Since SSAEs are most likely to seek access to credit for expansion of businesses, viable collateral (K) is vital for rapid credit approval. Thus, some of these firms may possess collateral (K) while others do not. In the case of Niger Delta where the poverty incidence is high, it is logically prudent to generalize that collateral is almost lacking by most of the enterprises (UNDP, 2006). Collateral therefore will be included in the argument for purpose of systematic analyses. In sum the profit can be re-expressed as:

$$\pi(R_i\ r) = max \{R_i - (1+ r)\ Bi_, - K\}, K = 0(small\ scale\ agro\ firms)$$ (4)

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Based on profit maximization desire of SSAEs as indicated in model (1) and (4), these firms may seek formal or informal loans to initiate or expand businesses, which is practically the situation in the Niger Delta (UNDP, 2011). Given lending rates, r and firms characteristics,(X) SSAEs decision to seek credit is considered as the demand for loan, which is the total number of firms that seek to borrow. In the credit market, this demand is contingent on the supply of loans, which is the number of loans that a particular financial institution (formal or informal) is willing to provide. It is notable that information asymmetry exists concerning various degree of borrowers riskiness (Stiglitz & Weiss, 1981)

3. Materials and Methods

3.1 Study Area

The study area is the Niger Delta Region of Nigeria. It lies between latitude 4º2" and 6º2" north of the equator and longitude 5º1" and 7º2" east of the Greenwich meridian (Tawan, 2006). Nine of Nigeria's constituent states make up the region, namely; Abia, Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Ondo, Imo and Rivers states, with an area of 112,000 sq. km, a population of 27 million people, 185 LGAs, about 13,329 settlements; 94% of which have populations of less than 5,000 (Ojameruaye, 2008).

According to the Ministry of Niger Delta Affairs (2011), the climate of the Niger Delta Region varies from the hot equatorial forest type in the southern lowlands to the humid tropical in the northern highlands and the cool montane type in the Obudu plateau area. Further, the wet season is relatively long, lasting between seven and eight months of the year, from the months of March to October.

The region has huge oil reserves and ranks sixth exporter of crude oil and third as world's largest producer of palm oil after Malaysia and Indonesia (Omafonmwan & Odia, 2009). Further, the Delta leads in the production of timber, pineapple and fish, also; cocoa, cashew, rice, yam and orange are produced in large quantities in the area (Omafonmwan & Odia, 2009). While cassava resources can stimulate the growth of local processing industries for fufu, garri, chips, flour, glucose, starch and pellets; massive furniture, building and craft industries can be built on the regions huge bamboo resources.

The major occupation of the people is fishing and agriculture but activities of oil companies have impacted on the environment with poor access to water, transport, telecommunication, power and fuel, housing, poor waste management, and poor educational structure(Igbuzor, 2006); this lead to conflict in the region some years back. Traditional industries in the area include canoe carving, pottery, cloth weaving, mat-making, thatch making (roofing materials), palm oil processing, food processing (garri, fufu and starch from cassava), local gin distillation etc. Small and Medium scale enterprises are found almost everywhere in the region. The main characteristics of these industries found in varying proportions throughout the region, are that they are based on manual artisanal technologies, local inputs and skills transferred chiefly through family upbringing and not via formal training or education (Ministry of Niger Delta Affairs, 2011).

3.2 Sampling Technique

A multistage sampling technique was used in this study. Of the 9 Niger Delta States of Abia, Akwa Ibom, Bayelsa, Cross river, Delta, Edo, Rivers, Imo and Ondo states, three states were purposively selected based on high concentration of economic activities which are

Agro-based. The States were Bayelsa, Delta and River States. Further, three local Government Areas each were purposively selected from each of the three states, from which one each was randomly selected for the study. The Local Government Areas were Brass, Warri North, and Phalga. This was possible with the help of staff of the Ministry of Economic Development/trade, the Small and Medium Scale Enterprise Associations resident in each state and by oral interview. In the third stage, a list of Small Scale Agro-based enterprises was obtained from the Small and Medium Scale Enterprises Associations and the Local Government Business registration office in each Local Government Area. This list was stratified into three sectors namely manufacturing, services and trading sectors, out of which two enterprise types were randomly selected from each of the three sectors, making it six. The enterprises selected were Bakery and Capentry/furniture- Manufacturing; Restaurants and Cold Room Services- Services; Poultry Feeds and drugs- Trading. Twenty of each of the selected enterprises from each sector was randomly selected for study. One hundred and twenty enterprises were selected from the three sectors in each local Government Area of each state. In all, three hundred and sixty enterprises were selected from the three states. Furthermore, the 360 enterprises were stratified along credit source lines. On the whole, two hundred and sixty four enterprises that accessed informal credit and 96 enterprises that accessed formal credit were used for detailed study. Data from the study were obtained from primary sources through the use of structured questionnaire and oral interview.

4. Analytical Framework

Employing the logit model, this study considers access to credit from the perspective of all those enterprises whose credit applications were approved to obtain either part or full amount of the loan. Thus the determinants of access to credit are estimated using Logit regression model. The logit model is used in this study to derive the determinants of access to credit since it provides results which can be more easily interpreted in terms of odds ratios. The model ensures that the probability lies in the interval of 0 and 1.

The regression form of the model is as follows:

$$I^* = \propto + \delta X_i + \rho Rca_i + \varphi Soc_i + \varepsilon_i \tag{5}$$

Where I_i^* represents a latent variable which is assumed to be normally distributed i.e $\varepsilon \sim N(0, \delta^2)$ but I_i is not. Rca_i is the relative credit amount, Soc_i is social capital and Xi represents firm's attributes. Ii denotes the observable value, which takes on the value 1 or 0. In this study $I = 1$ for enterprises whose credit application is approved to access credit, while $I = 0$ for the non-credit approval and did not access credit.

$$I_i = \{1 \text{ if } I_i^* > 0$$
$$= \{0 \text{ if } I_i^* \leq 0 \tag{6}$$

The cumulative logistic probability function is derived as follows

$$P_i = F(I^*) = F(\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i) \tag{7}$$
$$= 1/1 + e^{-I^*}$$
$$= 1/1 + e^{-(\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i)}$$

Multiplying both sides of the equation by $(1 + e^{-(\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i)i}$

We obtain: $(1 + e^{-(\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i)i})P_i = 1$

$e^{-l}{}_i^{*} = \frac{1}{p_i} - 1 = \frac{1-p_i}{p_i}$

Thus taking the reciprocal we get $e^{-l}{}_i^{*} = \frac{1-p_i}{p_i}$

Considering log of both sides of the equation gives $= I_i^{*}$ In $\frac{1-p_i}{p_i}$

In$= \frac{1-p_i}{p_i} = Z_{i=} \propto + \delta X_i + \rho Rca_i + \emptyset Soc_i$ or

$\text{Prob}(I_i = 1) = v(\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i) = \frac{e^{\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i}}{1 + e^{\propto + \delta X_i + \rho Rca_i + \emptyset Soc_i}}$ (8)

Equation (8) is vital since it indicates the probability of a given firm accessing credit when its credit application is approved or otherwise. This equation will be estimated to analyze the determinants of access to credit based on the structural characteristics of firms.

5. The Analytical Techniques

In this study, the logit model was employed to examine the structural determinants of access to credit by small scale agro-based enterprises.
Explicitly the model was specified as;

$Y = Ln(Pi/1\text{-}Pi) = \alpha_0 + \alpha_1 EDU_i + \alpha_2 AGE + \alpha_3 SIZE + \alpha_4 jINT + \alpha_5 INC + \alpha_6 GUA + \alpha_7 SOC$ (9)

$Y = Ln(Pi/1\text{-}Pi) = \alpha_0 + \alpha_1 EDU_i + \alpha_2 AGE + \alpha_3 SIZE + \alpha_4 INT + \alpha_5 INC + \alpha_6 COL + \alpha_7 SOC$ (10)

Where eqn(9) and (10) are specified for informal and formal credit respectively.
Y is the dichotomous dependent variable which can be explained as; Y=1, if entrepreneur has access to credit and 0 otherwise. The X's are independent variables defined as follows:
EDU=Entrepreneur's Education. (This is the level of formal education attained by the owners/manager of enterprise and is measured by the total number of years the entrepreneur spent in receiving education)
AGE= Enterprise' Age (Defines the total number of years that the business has been in existence, measured in years).
SIZ= Enterprise' size (This describes the worth of the enterprise; total assets of the enterprise valued in Naira)
INT= Interest Amount; this is the total amount the borrower pays as interest charges on money borrowed.
INC= Income of firm (Receipts of the enterprises from sales in the last one year (Measured in Naira)
COL= Collateral (Defined as any valuable asset that eases the approval of formal credit (Measured as Dummy: 1 if firm provided collateral to access credit, 0 otherwise)
GUA= Describes the individual who pledges that a debt will be paid. (Binary; 1 if guarantor was available and 0 if not)
SOC=Social Capital (For informal credit access; it describes borrowers acquaintance with lender. Measured as dummy. 1 if borrower is acquainted with lender, 0 otherwise. For formal credit, it describes membership of cooperative society, hence the number of people in the cooperative society.

6. Results and Discussion

6.1 Determinants of Informal Credit Access

Tables 1 and 2 present the maximum likelihood estimates of the logit model described above. The estimated logit regression model gave the Mcfadden R-squared of 0.509 and 0.873 for both group of enterprises. This implies that all the explanatory variables included in the models were able to explain about 50% and 87% of the probability of small scale agro-based enterprise access to credit in the study area. The number of cases correctly predicted were 93.4% and 95.8% respectively for both group of enterprises.

The coefficient of gender is negative and significant at 1% level for the informal credit borrower enterprise. This means that the probability of accessing informal credit decreases with increasing number of male entrepreneurs. That is, for every increase in number of male entrepreneurs, there is a *0.89 reduction in accessing informal credit. This is consistent and desirable and in line with Ajagbe, Oyelere and Ajetomobi (2012) which pointed out that male constitute the majority of credit beneficiaries from banks. The implication of this may be that male entrepreneurs in the study area patronize banks for credit acquisition more than females.

Table 1. Estimated Determinants of Informal Credit Access

Variable	Coefficient	Std. Error	Z	Slope(Maginal Effect)	p-value
Const	0.924	1.083	0.853	-	0.393
GEN	-2.982	0.893	-3.339	-0.088	0.000
EDU	-0.080	0.060	-1.335	-0.003	0.181
AGE	0.123	0.072	1.700	0.004	0.089
SIZ	2.111e-08	2.178e-07	0.969	8.262e-09	0.332
INC	-1.064e-08	1.406e-07	-0.075	-4.166e-010	0.939
INT	-7.681e-08	2.825e-07	-0.271	-3.006e-09	0.785
SOC	4.801	0.707	6.781	0.677	0.000

No. of cases correctly Predicted	93.4%	
McFadden R-squared	0.509	
Log-likelihood	-48.072	
No. of Observations	264	

Source: Estimated from Field Survey data, 2012

Age of enterprise has a significant effect on the probability of informal credit access by small scale agro-based enterprises in the region. The significant level is 10% and it is positively signed. For every increase in enterprise age, the probability of accessing informal credit increases by 0.07. This is consistent and desirable and in line with Atieno (2001) which reported age as significant determinants of informal credit access. According to Berger and Udell (1995, 1998) the age of the firm reflects the reputation that is openly transmitted to the market, hence informal credit suppliers in the area consider the years of existence of business as form of security for their loaning money because, a business that has been in existence for sometime must have assumed some level of stability, unlike start-up businesses. This is consistent with Berger and Udell (1995) which asserts that older firm's

accesses credit easier than younger firms because they have been released from asymmetric information problems with the lender by improvements in the firms' public reputation.

*As number of male entrepreneurs increases, the probability of entrepreneurs accessing credit from the study area reduces by 0.89.

Social capital has a significant effect on informal credit access by small scale agro based enterprises in the region. The significant level is 1% and it is positively signed. This is consistent and desirable considering the fact that informal credit suppliers live among the people and thus there is likely going to be a closed relationship among lenders and borrowers in the community. The result is in line with Mwangi and Ouma (2012) who reported a positive relationship between social capital and credit access; the higher the number of groups one pledges loyalty to, the higher the probability of accessing informal credit. It is also in line with Togba (2009) who reported that trust increases probability of accessing informal credit. kawachi *et al* (1999) argues that social capital can increase the likelihood of access to various forms of social support during times of need, while Oni, Salman and Idowu (2011) further buttressed that households may have limited financial or food resources but households with higher levels of social capital are less likely to experience hunger

6.2 Determinants of Formal Credit Access

The co-efficient of education is positive and significant at 10% level for the formal credit borrower enterprises. This means that the probability of accessing formal credit increases with increased educational level. The higher the level of education of these group of entrepreneurs, the more enlightened they are and the more likely they are to access credit. Ajagbe *et al* (2012) reported a positive relationship between level of educational attainment by respondent and securing credit from banks. This is also in line with Avai and Toth (2001) who identified education as a significant determinant of formal credit access. It further agrees with Doan *et al* (2010) who viewed little education as associated with the poor and discouraged borrowers. Education therefore has a definite positive impact on the likelihood to seek out formal credit. The degree of the effect increases consistently with educational attainment, so that more educated small scale agro-based entrepreneurs are more inclined to seek out external funds.

The co-efficient of age is positive and significant at 5% level for the formal credit borrower enterprise. This implies that the probability of accessing formal credit increases with enterprise age. In other words, the older the enterprise, the greater the probability of accessing formal credit. Formal credit suppliers usually see enterprise age as a yardstick for lending. According to Chandler (2009), the longer a firm exists, and the bigger it is, the more it signals that it can weather tough economic conditions. Further, staying in business, a firm can signal that it does not adopt opportunistic behavior (Fatoki & Asah, 2001). The result is in line with Klapper, Laeven and Rajan, (2010), which posited that younger firms(less than 4 years) rely less on bank financing and more on informal financing. Ngoc and Nguyen, (2009), also assets that it is often difficult and expensive for young SMEs to access bank financing due in large part to information asymmetry between the banks and the firms. Therefore as firms grow in age, there is a tendency for formal credit suppliers to begin to build confidence as the firm is assumed to have passed through the murky waters of economic downturns as age increases.

The size of the enterprise (valued in Naira) is significant and positively related to access to formal credit by small scale agro-based enterprises. The significant level is 5%. This implies that the probability of accessing formal credit increases with increasing size of enterprise. That is, for every increase in value of asset of small scale agro-based enterprises,

there is a 5.81065e-07 increase in probability of accessing formal credit. This is consistent and desirable, in line with Burkart and Ellingsen, (2004) which reports that firms with more real assets tends to have greater access to long-term debt. It also agrees with Honhyan (2009) who revealed that larger firms tend to be more diversified and fail less often. Size is therefore viewed as an inverse proxy for the probability of bankruptcy. Further, using number of employees as a measure of size of enterprise, Fatoki and Asah (2011) determine that SMEs that have more than 50 employees are significantly more likely to be successful in their credit application compared to SMEs that have less than 50 employees.

Table 2. Estimated Determinants of Formal Credit Access

Variable	Coefficient	Std. Error	Z	Slope(Maginal Effect)	p-value
Const	-42.079	19.587	-2.148	-	0.031
GEN	2.054	1.563	1.311	0.125	0.189
EDU	0.300	0.166	0.180	0.014	0.071
AGE	2.016	0.985	2.046	0.095	0.040
SIZ	1.406e-06	5.810e-07	2.420	6.631e-08	0.015
INC	9.525e-08	5.246e-07	0.181	4.492e-09	0.855
INT	4.511e-07	9.139e-07	0.495	2.136e-08	0.620
COL	28.204	14.139	1.994	0.999	0.046
SOC	0.099	0.086	1.154	0.004	0.248
No. of cases correctly Predicted	95.8%				
McFadden R-squared	0.873				
Log-likelihood	-7.998				
No. of Observation	96				

Source: Estimated from Field Survey Data, 2012

The co-efficient of collateral is positive and significant at 5% level for the formal credit borrower enterprise. The implication of this is that the probability of accessing formal credit increases with availability of collateral. There is a 14.14 likelihood of a small scale agro-based enterprise in the study area with collateral to access formal credit. This is consistent with *a priori* expectation and agrees with Fatoki and Asah (2011) that SMEs with collateral are significantly more likely to be successful in their credit applications compared to SMEs without collateral. It is also in line with Bougheas, Mizen and Yalcin,(2005) who reports that collateral is an important factor for SMEs in order to access debt finance. Barbosa and Moraes (2004) further observe that SMEs owners/entrepreneurs that invest heavily in tangible assets tend to have higher financial leverage since they can borrow at lower interest rates if their debt is secured with such assets.

7. Performance of Enterprises in the Region

The ability of small scale agro based enterprises to cope with turbulence, and to provide an entrepreneurial engine of job creation and innovation in the region is heavily dependent upon their financial position. Instability in the Niger Delta made clear that the financial position of firms in the region, particularly small firms, was less adequate than it might have been. Ratio analysis is commonly used to interpret the adequacy of financial performance. The current ratio gives current assets relative to current liabilities. A ratio of less than 1.00

indicates that current liabilities exceed current assets, and thus the liquidity of the firm is poor.

Table 3 and 4 therefore represent the current ratio for small scale agro-based enterprises that received credit from formal and informal credit sources in the region.

The table reveals that 29.55% of enterprises that received credit from the informal credit market and 25% of the enterprises that received from the formal credit market in the study area, had a current ratio of less than one. This implies that these groups of enterprises cannot meet up their current obligations. More than 60% of the enterprises in the region can meet up their current obligations. From these, a greater number (51.04%) of the enterprises that received credit from formal credit sources with current ratio >5.99 are well able to meet up current obligations compared to the smaller percentage (45.45%) of enterprises who received from the informal credit sources with similar current ratio. Further, the implication of this is that majority of enterprises who received credit from formal credit sources perform better than those small scale enterprises who received credit from the informal credit sources. This result is expected, desirable and in line with *a priori* expectation. This is because formal credit is always larger than informal credit and useful for meaningful production. If well employed, large size credit amount which is characteristic of formal loans should enhance performance through economies of scale occasioned by larger credit amount, *ceteris paribus* the result of this work corroborates the research findings of Majumder and Rahman (2011) in Bangladesh.

Table 3. Current Ratio for Formal Credit Borrower Enterprise

Category	Frequency	Percentage
0.00-0.99	24	25
1.00-1.99	4	4.16
2.00-2.99	9	9.37
3.00-3.99	5	5.20
4.00-4.99	2	2.08
5.00-5.99	3	3.12
>5.99	49	51.04
Total	96	

Source: Estimated From Field Survey Data, 2012

Table 4. Current Ratio for Informal Credit Borrower Enterprises

Category	Frequency	Percentage
0.00-0.99	78	29.545
1.00-1.99	41	15.530
2.00-2.99	6	2.272
3.00-3.99	5	1.893
4.00-4.99	8	3.636
5.00-5.99	6	2.27
>5.99	120	45.454
Total	264	

Source: Estimated From Field Survey Data, 2012

4.7.2. Difference in Means of Current Ratio

There is no significant difference between mean current ratio by the two groups of enterprises, that is, enterprises that borrowed from the informal credit market and enterprises that borrowed from the formal credit market. The t-value is insignificant (.579), implying that there is no difference in performance between enterprises that borrowed from formal credit market and enterprises that accessed funds from the informal credit market. That is, even though majority of enterprises that borrowed from formal credit market were able to meet up current obligations compared to a lesser percentage of enterprises that borrowed from the informal credit market, their performance do not actually vary.

8. Return on Capital Employed by Small agro based Enterprises

Further, tables 5 and 6 represent the return on capital employed for small scale agro-based enterprises that received credit from informal and formal credit sources in the study area. The most independent ratio for assessment of profitability is the return on capital employed. Lower ratios suggest that management is not efficient in the use of funds. It reflects the overall efficiency with which capital is used.

Table reveals that 19.69% of informal credit borrower enterprise and 12.5% of formal credit borrower enterprise have a return on capital ratio of 0.10 and below while 60% of the enterprises that received from the informal credit source and 72% of enterprises that received from the formal credit source have a return on capital of 0.100 and above. In theory, the return on capital employed (ROCE) should be above borrowing rate. The current commercial bank borrowing rate in the country is fixed at about 12.5%, however, this is not obtainable in the banks as bank lending rate are observed to be as high as 25%. Against this backdrop, the result implies that majority of the enterprises from both group have an ROCE below the lending rate for the formal credit borrower, hence there is inefficient use of resources among small scale agro based enterprises in the study area. More enterprises that received credit from the formal credit market however are more efficient in use of capital than those that received from the informal market. Again the result of this work corroborates that of Majumder and Rahman (2011) in Bangladesh.

Table 5. Return on Capital Employed For Formal Credit Borrower Enterprise

Category	Frequency	Percentage
0.00-0.10	12	12.5
0.11-0.20	3	3.125
0.21-0.30	2	2.083
0.31-0.40	3	3.125
0.41-0.50	-	-
0.51-0.60	-	-
0.61-0.70	-	-
0.71-0.80	3	3.125
0.81-0.90	2	2.083
0.91-1.00	1	1.041
>1.00	70	72.916
Total	96	

Source: Estimated From Field Survey Data, 2012.

Table 6. Return on Capital Employed for Informal Credit Borrower Enterprise

Category	Frequency	Percentage
0.00-0.10	52	19.696
0.11-0.20	17	6.439
0.21-0.30	2	0.75
0.31-0.40	11	6.875
0.41-0.50	2	6.489
0.51-0.60	3	1.136
0.61-0.70	9	3.409
0.71-0.80	3	1.136
0.81-0.90	3	1.136
0.91-1.00	2	0.75
>1.00	160	60.606
Total	264	

Source: Estimated From Field Survey Data, 2012

9. Difference between means of return on capital employed

There is a significant difference in the mean return on capital employed by the two groups of enterprises, that is, enterprises that borrowed from the formal credit market and enterprises that borrowed from the informal credit market. The T-value is -3.57. This is significant at 1% level at 1% level, implying that enterprises that depended on formal credit sources performed more efficiently than enterprises that accessed funds from the informal credit sources. This result may be due to consistent and efficient monitoring of loan-use by financial institutions in the area. The result corroborates that of Majumder and Rahman (2011) in Bangladesh.

10. Conclusion and Policy Recommendations

The study examines credit accessibility and performance of small scale agro-based enterprises in the Niger Delta Region of Nigeria. Data analysis using the logit model to estimate credit access gave some plausible results for the small scale enterprises that borrowed from the different credit sources of informal and formal credit. The result revealed that Gender, Social Capital and Enterprise Age significantly influence informal credit access. For the formal credit borrower enterprise; Enterprise Age, Enterprise Size, Collateral and Education had significant influences on formal credit access. It could be concluded from this study that the credit source in which small scale agro-based enterprises decide to borrow from plays a major role in affecting accessibility and performance. Although informal finance provided easier access to credit, the result of the study reveals that informal credit is confined to specific activities and at lower levels of income thus limiting its use and consequently lowering performance of small scale enterprises operating in the region. This study corroborates the findings of Essien and Arene (2014) in Nigeria and Bohme & Thiele (2012) in West Africa. Based on these findings, financial Institutions should review the conditions for borrowing so that more small scale agro-based enterprises will be able to access formal credit. This is because majority of these enterprises in the Niger Delta that accessed formal credit perform much better than those that accessed informal credit. If this is done, it will act as a booster to the economy and will divert young minds from vices in the region. Education is an important factor influencing formal credit access and a veritable tool

for economic growth and development. Designing appropriate educational packages for agro-based entrepreneurs will be a major milestone towards boosting productivity and a journey towards economic emancipation in the region. Informal credit it attractive and flexible to access yet it is not enough for meaningful production. A model therefore should be develop that will make formal credit attractive to small scale enterprises in the area just as informal credit. This can be done by making the borrower have easy access to borrowed funds at minimum risk. Formal finance increases the chances of enterprises in meeting their current obligations as revealed by the return on capital employed analyses. Credit suppliers as a matter of social cooperate responsibility should enlighten entrepreneurs on the need to form cooperatives. Through these many of them will attain greater performance, *ceteris paribus.*

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Acknowledgement