Sociological Characteristics and Creditworthiness of Rural Agribusinesses Financing in Nigeria

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Abstract

The study accessed the influence of sociological characteristics of agribusiness operators in Nigeria on their creditworthiness. Some of the most consumed crops in the country, cassava and rice, were selected in the States where they are famously grown, Edo and Kano States, respectively, for the assessment of their medium-scale agribusiness operators (farmers). Krejcie and Morgan (1970) sample size formula was used to approximately select 300 farmers (each having more than 3 Ha) from the two States. Data collected were analysed with the use of regression model and t-test statistics while descriptive statistics such as frequency counts, percentages and mean were used to describe the data. Results showed that the average years of business in Edo and Kano States were approximately 16 and 23 years, respectively while the farm size was approximately 7 and 13 hectares also. On average, about ₦5,271.77 and ₦7,398.16 were spent on inputs in Edo and Kano States, respectively. It was observed that the Gross Margin of ₦12,577,987.88 with 73.12% returns on investment and N1,329,346.11 with 73.12% Return on Investment in Edo and Kano States, respectively were observed. Sociological factors such as social status, inputs, income and distance from market (travel cost) were the significant variables that could be questioned when creditworthiness (financial capacity) is to be accessed. The finding recommends that qualified agribusinesses and institutional lenders need to be sensitized on appropriate financial facilities that consider sociological characteristics in risk mitigation and pricing, so as to create more economic opportunities, and enable food security.

Keywords: agribusiness, creditworthiness, rural, sociological characteristics.

Introduction

Agriculture provides means of livelihoods to majority of Nigerians. This makes it an indispensable aspect of the Nigerian economy with respect to its contributions to the Gross Domestic Product (GDP). Generally, finance is very critical to the success of any business. Therefore, agricultural credit or loanable fund has long been identified a critical input in the development of agricultural sector (Okonkwo, Achoja and Anarah, 2018). Inadequacy or complete absence of this productive resource among other factors of production will definitely have significant negative effects on agricultural productivity and the nation stands to lose so much in terms of decline in the contributions of agriculture to the nation's economy.

Credit is considered as a catalyst that activates other factors of production and makes under-utilized capacities functional for increased production (Ijere, 1998, cited in Njoku, 2016). According to Salami and Arawomo (2013) as cited in Ma-Azu (2015), the provision of credit to agribusiness owners is widely perceived as an effective strategy for promoting the adoption of

improved technologies by rural agribusinesses. Thus, agricultural credit plays a crucial role in agriculture and rural development as it enables agribusiness owners reap economies of scale, venture into new fields of production, employ new technologies and empower them to provide utilities for a widening market. Interestingly, agricultural credit plays this role because it bridges the capital gap that exists in agricultural production.

Regrettably, lack of a stable national credit policy, paucity of funds and non-functionality of credit institutions which can assist agribusinesses have been described as some of the reasons for the decline in contribution of agriculture to the economy of Nigeria (Adebayo, 2019). The above stated reasons have equally made agribusiness owners to lack access to credit facilities and this has contributed to the poverty status of many developing countries (Okonkwo *et al*., 2018). On the hands, studies had shown that even with the limited credit facilities available, agribusiness owners lack assets, mainly collaterals, which could enable them to be credit worthy (Adjei, Arun & Hossain, 2009 cited in Owusu, 2017). These predicaments such as lack of collateral and/or stained credit history, has made most agribusinesses to be neglected or bypassed not only by commercial and national development banks, but also by formal micro-credit institutions. In addition to personal savings and own sources, agribusiness owners thus, have to rely on incomes loaned by friends and relatives, remittances, and informal money lenders to finance their agribusinesses (Salami and Arawomo, 2013). As a result, a large number of Nigerian agribusiness owners self-finance their activities. With this, scale of production is expected to be grossly negatively affected and this consequently affects employment, production level and Gross Domestic Product (GDP) contributions to nation's economy.

Therefore, though, credit availability and accessibility to a large extent determines the success or otherwise of any business enterprise, all things being equal. It is very imperative to be able to establish the financial stability and worth of any business enterprise by the financial institutions. One of the understudy attributes of business owners in Africa is the evaluation of their sociological characteristics with respect to their financial stability. Thus, there is a need for this study.

Nigeria is structured along geographical and ecological zones with regards to crops grown. In the Northern part of the country, rice production is known to be among the premium crops while cassava is a popular arable crop grown in the Southern part. Edo and Kano States are highly known for the production of rice and cassava and many agribusinesses owners for these crops can found. However, studies on the relationship between sociological characteristics and creditworthiness of agribusinesses in cassava and rice are grossly unknown. Therefore, the study was conducted to examine the influence of sociological characteristics of agribusinesses and their creditworthiness in cassava and rice in Edo and Kano States, respectively with a view to unraveling the critical sociological characteristics that need to be addressed in the determination of creditworthiness of agribusiness. Specifically, the study described the selected socio-economic characteristics of agribusinesses in cassava and rice in Edo and Kano States, respectively; determined the difference in the creditworthiness of agribusiness in the two states and ascertained constraints influencing agribusiness in cassava and rice agribusiness in the study areas for policy recommendations.

Methodology

Description of the study area

The study was conducted in Edo and Kano States cassava and rice agribusiness farmers. Edo State is situated in the southern part of Nigeria with its headquarters in Benin City. It is bounded in the north and east by Kogi State, in the south by Delta State and in the west by Ondo State. It was created from the Bendel State in 1991. The predominant occupation of the people is farmingand cassava production is about the most popular food crop grown in the region. It is made into various recipes such as flours, balls, tapioca, starch and others. Kano is located in the norther region of Nigeria and it's the commercial centre of the north with high population of farmers growing rice. It was created in 1967 and it is bounded by Katsina State to the northwest, Jigawa State to the northeast, Bauchi State to the southeast and Kaduna State to the southwest. The State capital is Kano. The choice of the two (2) States was their level of production of cassava and rice in the southern and northern region of Nigeria.

The population of the study comprises of agribusiness venture who claimed tobe registered with the Ministry of Commerce and Industries in the two sampled states whose agribusiness ventures have been in existence between 2009 and 2019. These periods were considered appropriate because Nigeria started the process of restoring agriculture as the mainstay of her economy and many Small and Medium Scale Enterprises (SMEs)in agribusinesses sprang up during these periods.

Sampling techniques and size

Simple random sampling procedure will be adopted as a framework for sample selection. A list of registered agribusiness ventures would be obtained from the Ministry of Commerce and Industries in each of the States for the sample selection. Krejcie and Morgan (1970) formula to determine the sample size from the study population would be used to calculate the representative sample size. This formula is explained below:

$S = X^2NP\ (1-P)/\ d^2\ (N-1) + X^2P(1-P)$
Where:
S = required sample size
X^2 = the table value of chi-square for one degree of freedom at the desired confidence level
N = the population size
P = the population proportion (assumed to be .05, however, 0.10 was adopted for this study since this would provide a good representative sample size)
d^2 = the degree of accuracy expressed as a proportion (0.05).
The representative sample size would be selected from the list of agribusiness owners using simple random sampling.

The formula was used to select about 161 and 154 agribusiness operators in Edo and Kano States. However, approximately 150 each were used for the study. Thus, in all, 300 agribusinesses were used for this study.

Methods of data collection
Data for this study was collected using structured questionnaire and interview schedule for the quantitative data.

Analytical techniques
Data were analysed with the use of Stata and SPSS statistical software. Specifically, descriptive statistics such as frequency counts, percentages, mean and appropriate charts were used to

describe the data while profitability analysis, return on investment, and independent t-test analyses were used to make inferences from the quantitative data. In addition, results of FGDs and IDIs were transcribed in line with the guideline for reporting qualitative findings. Models for the analyses were presented thus:

For the profitability for the creditworthiness of agribusiness ventures

Gross Margin = Total Revenue – Total Variable cost - - - - (1)
Where Total Revenue = Unit Price × Quantity of farm produce sold.
Total Variable cost = Total cost – Total Fixed cost
Net return = Total Revenue – Total cost- - - - - - (2)
Return on Investment (ROI) or
Percent Profit on Cost = Net Return/Total Cost X 100% - - - (3)
Effective creditworthiness based on financial capacity = if ROI is 2 times
Greater than average banks' interest rates - - - - - - (4)

Paired t-test would be used to compare the creditworthiness of the two states as modeled below:

The t-test statistic is given as:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_1^2}{n_2}}}$$

Where

$\bar{X}_1$= mean net income of cooperators

$\bar{X}_2$= mean net income of non-cooperators

n_1 = number of cooperators

n_2 = number of non-cooperators

S_1^2 = variance of net income of cooperators

S_2^2= variance of net income of non-cooperators

$$S_1^2 = \frac{\Sigma(x_1 - \bar{X}_1)^2}{n_1}$$

$$S_2^2 = \frac{\Sigma(x_2 - \bar{X}_2)^2}{n_2}$$

Where

X_1= Mean of creditworthiness of agribusiness owners in Edo State

X_2=Mean of creditworthiness of agribusiness owners in Kano State

N_1= Sample size for agribusiness owners in Edo State

N_2=Sample size for agribusiness owners in Kano State

S_1= Variance for agribusiness owners in Edo State

S_2= Variance for agribusiness owners in Kano State

T= estimated t-values

Results and Discussion

Evidence in Table 1 show that the average years of business in Edo and Kano States were approximately 16 and 23 years, respectively while the farm size was approximately 7 and 13 hectares also. On the ownership of land, 55.3% and 40.7% rented their farmland, 44.7% and 59.3% owned their farmland in Edo and Kano States, respectively. Unfortunately, only 14.0% and 35.3% of the farmland had titles. The approximate mean amount used to rent 1 hectare of farmland in Edo State was ₦24,000 while it was ₦12,000 in Kano State. In addition, 92.0% of agribusiness owners in Edo State planted once a year while about 40.7% planted all year round in Kano State. All the agribusiness in Edo State practiced in-situ planting while in Kano, 8.7% practiced transplanting. Types of seeds, the study shows that 75.3% and 98.7% of agribusiness in cassava and rice enterprises in Edo and Kano States, respectively planted improved seeds, and about ₦5,271.77 and ₦7,398.16 were spent on inputs. Similarly, all the agribusiness owners in both states hired tractor for the land preparation and they paid on average ₦1,000 on hiring tractor per hectare while about ₦100,000 was used to hire tractor per day. For the irrigation per hectare, about ₦20,500 and ₦26,500 were spent by the agribusiness owners in Edo and Kano States, respectively. On the working cash, it was observed that on average, ₦800,300 and ₦1,000,000 were obtained from the banks/microfinance institutions in Edo and Kano States while ₦500,500 and ₦800,000 were obtained through personal savings, ₦1,200,000 and ₦2,000,000 were obtained through cooperative societies while ₦450,000 and ₦700,000 were obtained from other undisclosed sources by the agribusiness owners in Edo and Kano States, respectively.

The study shows that cassava and rice agribusinesses in Edo and Kano States, Nigeria are highly profitable and they are creditworthy for farmers who operate on medium scale. They had relatively high years of experience with different amount used for the leasing of farmland. The amount used to lease the same size of farmland in Edo State double the amount used to rent the same farmland in Kano State. All the agribusiness owners in Edo State depended on rain for their business, although high proportion of farmers equally depended on rain in Kano but certain proportions still cultivated crops all year round through irrigation. Therefore, farming in Edo State is 100% rain depended. The implications of this finding is that agribusiness in Kano State may be more profitable than the ones in Edo State. The all year production is expected to produce more yields and larger expanse of farmland may be cultivated. Thus, more profit all things being equal. This finding is in conformity with the findings of Njoku (2016) that posited that farm size was among the variables that contributed to the creditworthiness of agribusiness in Abia State.

Table 1: Sociological characteristics of agribusiness

	Edo, n= 150	**Kano, n= 150**

Variable	Freq.	%	Mean	Std. Dev	Freq.	%	Mean	Std. Dev
Years in business			16.3	6.17			22.77	5.81
Farm size (Hectares)			7.31	1.15			12.5	3.81
Ownership of land								
Rent	83	55.3			61	40.7		
Own	67	44.7			89	59.3		
Land title	21	14.0			53	35.3		
Rental cost/ha/annum			24000				12000	
Tenure (months)			2000				1000	
Seasons per year								
1	138	92.0			89	59.3		
2	12	8.0			61	40.7		
Planting/harvest								
Raining season	138	92.0			89	59.3		
All year round	12	8.0			61	40.7		
Planting practice								
In-situ	150	100.0			147	98.0		
Transplanting					13	8.7		
Seed type								
Local	37	24.7			12	8.0		
Improved	113	75.3			148	98.7		
Cost of Inputs			5271.77	1,261.17			7398.16	20319.6
Tractor								
Own								
Hired	150	100.0			150	100.0		
Rent per ha			1012.12				1000	
Rent per day			100500				100000	
Irrigation/hectare			20500				26500	
Working cash								
Bank/mfi			800300				1000000	
Saving			500500				800000	
Coop			1200000				2000000	
Other			450000				700000	

Source: Computed from field survey, 2019.

Financial capability of agribusinesses

The yields from the agribusiness enterprises were used to describe the financial capability of the agribusiness owners in the study areas. Results in Table 2 show that on average, the mean yield of cassava in Edo State was approximately 53,600kg while that of the rice produced in Kano State was 3,700kg. However, the quantity sold was approximately 51,000kg and 3000kg, respectively in Edo and Kano States with the price per kg standing at ₦250 and ₦525.11.

Financial capacity of both cassava and rice agribusinesses in both states was high, though both crops have different measures and prices but the overall assessment indicates that they are both profitable and as such the operators of such agribusinesses under normal conditions.

Table 2: Indicators of financial capacity of agribusiness

	Edo, n= 150		**Kano**	**n=150**
Variable	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**
Yield (convert to kg)	53600.13	2172.18	3772.51	516.21
Yield sold (convert to kg)	51000	1101.1	3000	6.38
Price per kg (convert to p/kg)	250	0.71	525.11	150.37
Equipment	150500	10019.11	850000.51	101261.55

Source: Computed from field survey, 2019.

Profitability analysis of agribusinesses

Evidence in Tables 3 and 4 show the Gross Margin analysis of agribusiness in Edo and Kano States. It was observed that cassava took about 66.7% of all the variable cost with the cost of transportation being the least while for the fixed variable, cost of land was about 68.6% of the total and the Gross Margin value was ₦12,577,987.88 in cassava production per annum among agribusiness owners. Return on Investment of 73.12% shows that agribusiness in Edo State was highly profitable and therefore, they are creditworthy putting in mind the interest rate of 30% in Nigeria. Similarly, it was observed that in Kano State, the Gross Margin was ₦1,329,346.11 and the return on investment of 71.5% implies that agribusiness in Kano are creditworthy.

The findings show that Return of Investment (ROI) was used to determine credit worthiness and the findings indicated that the ROI of above 70% indicated that agribusiness in the study area was creditworthy based on the interest rate of about 30% in Nigerian banks. This means that with the ROI of above 70%, agribusiness operators would still be able to make adequate amount to pay back whether loan they may be given by the banks for any kind of agribusiness. This means that agribusiness operators in these areas would be able to adequately pay back any loan given by the financial institutions if the operators wish to do so. This finding is in line with the findings of Assogba, *et al*. (2017); Okonkwo *et al*. (2018); Ettah & Ebu (2018) that stated that the higher the return of investment, the better for any agribusiness with respect to loan repayment.

Table 3: Gross Margin Analysis for cassava agribusiness in Edo State

Items	**Quantity**	**Unit price/bird**	**Total COST**	**%**
Variable cost				
Fertilizer	10.00	5500	55,000.00	66.67

Herbicide	15.00	1,500.00	22,500.00	27.27
Pesticide	15.00	1500	22,500.00	27.27
Cost of labour	10	1500	15,000.00	18.18
Cost of transportation			5,000.00	6.06
Cost of weeding			10,000.00	12.12
Harvesting			7,000.00	8.48
Total Variable cost (TVC)			**137,000.00**	
Fixed cost				
Cost of rent on land			24000	68.55
Rent on tractor			1012.12	2.89
Land preparation			10,000.00	28.56
Total fixed cost			35,012.12	
Revenue				
Yield (convert to kg)	53600.13	250		
Yield sold (convert to kg)	51000	250	12,750,000.00	
Total Revenue			12,750,000.00	
Gross margin			12,577,987.88	
ROI			73.12%	

Source: Computed from field survey, 2019.

Table 4: Gross Margin Analysis for rice agribusiness in Kano State

Items	**Quantity**	**Unit price/bird**	**Total COST**	**%**
Variable cost				
Fertilizer	5.00	5500	27,500.00	14.03
Herbicide	10.00	1,500.00	15,000.00	7.65
Pesticide	10.00	1200	12,000.00	6.12
Cost/kg seed (N)			5271.77	2.69
cost of labour	6	1000	1,200.00	0.61
cost of threshing			25,000.00	12.76
cost of transportation			20,000.00	10.21
cost of weeding			15,000.00	7.65
Harvesting			15,000.00	7.65
Total Variable cost (TVC)			**135,971.77**	
Fixed cost				
Cost of rent on land			24000	47.99
Rent on tractor			1012.12	2.02
Land preparation			25,000.00	49.99
Total fixed cost			50,012.12	
Revenue				

Yield (convert to kg)	3772.51			
Yield sold (convert to kg)	3000	525.11	1,575,330.00	
Price per kg (convert to p/kg)	525.11			
Total Revenue			1,575,330.00	
Gross margin			1,329,346.11	
Net Returns				
ROI			7.15	

Source: Computed from field survey, 2019.

Sociological factors and creditworthiness

Evidence in Table 5 shows that social status, level of traveling, other form of occupation and income level were significantly related to the creditworthiness of agribusiness in Edo and Kano States and the critical t-value of 2.79 implies that the null hypothesis was rejected while the alternate accepted. This means that sociological factors had great influence on the creditworthiness of agribusiness in the study areas. Findings by Akpan, *et al*. (2013) and Njoku (2016) asserted that in addition to the socio-economic characteristics such as farm size, year of farming, education years, social status, and level of exposure were significant factors that could be used to explain the directions of creditworthiness of agribusinesses.

Table 5: Sociological factors and creditworthiness

Regressor	**Edo**	**Kano**
	Std. Err (t-statistics)	**Std. Err (t-statistics)**
Social status	(0.741) 4.93**	(0.491) 5.44**
Level of traveling	(0.146) 7.66***	(0.601) 2.18
Other source of occupation	(0.451) 3.39*	(0.920) 3.61*
Income level	(0.911) 6.12***	(0.203) 7.16***

Source: Computed from field survey, 2019.
DV= Creditworthiness; * sign at 1%, **Sign at 5%, *sign at 10%**
t- tabulated (critical value) = 2.79

Differences in creditworthiness of agribusinesses

Table 6 indicates that agribusiness creditworthiness between Kano (Mean = 71.54) and Edo (Mean = 121.47) was significantly difference with Edo having the higher mean value compared to the agribusiness owners in Kano State. The t-statistic of 13.18 had a p-value of 0.000 shows that there was significant difference between the two states with respect to the creditworthiness of agribusiness owners. The critical value of 2.79 implies that the calculated t-value of 13.18 was higher, thus, the null hypothesis which stated that there was no significant difference in the creditworthiness of agribusiness in Edo and Kano States, respectively was rejected. The difference in creditworthiness may be due to the environmental, economic and cultural factors that influence behavior and these are expected to vary from region to region. The finding shows that agribusiness operators in Edo State who are cassava agribusiness are more stable than their counterparts rice agribusiness in Kano State with respect to stability in the repayment of loans.

Table 6: Difference between agribusiness creditworthiness between business owners in Edo and Kano States, Nigeria

	Mean	Std. Dev	MD	t-stat	t-tab	P-value
Kano	71.54	13.11	49.93	13.18	2.79	0.000
Edo	121.47	20.59				

Source: Computed from field survey, 2019.
MD = Mean difference

Conclusion

Creditworthiness is a critical condition which the financial institutions consider in extending credit to any business owner. The findings of this study show that agribusiness operators in Edo and Kano States are creditworthy with relatively high number of years of experience, and reasonable farm size mostly leased. The Edo State agribusiness operators depend entirely on rain while a little percentage of those in Kano had access to irrigated land. Though, both operators had high financial capability, and this may be responsible for the creditworthiness documented. Social status, travel cost (distances from market) and historical income were considered as the most significant factors that positively influenced the creditworthiness in the study area. However, agribusiness operators in Edo State are more creditworthy than their counterparts in Kano State; obviously, due to differences in crops being cultivated and crops' cost of production and market value; but, differences in social activities (farm practices, land tenure system, closeness to market), and differences in vegetation and environmental factors contributing to yield, are suspected too.

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