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ANALYSIS OF INFORMAL CREDIT WORTHINESS AND REPAYMENT POTENTIALS AMONG CASHEW NUT GATHERERS IN ISUIKWUATO LOCAL GOVERNMENT AREA OF ABIA STATE, NIGERIA.

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Abstract

The study analyzed informal credit worthiness and repayment potentials among cashew nut gatherers in Isuikwuato Local Government Area of Abia State, Nigeria. Specifically, the study described socio-economic characteristics of cashew nut gatherers; examined amount of credit applied for, amount received and amount repaid; determined factors affecting informal credit repayment potentials; used scoring index to determined informal credit repayment potentials of cashew nut gatherers; determined factors influencing informal credit worthiness of cashew nut gatherers; identified constraints to repayment of informal credit by cashew nut gatherers. Multistage random sampling technique was used in the selection of sixty (60) cashew nut gatherers. The primary data used for the study were collected with pre-tested semi-structured questionnaire and subjected to descriptive statistics, multiple regression and discriminant analysis. The study recommended that the problem of high interest rate of informal credit institutions should be looked upon and addressed by the government for sustainable development and sustainability.

Keywords: Analysis, Informal sector, Credit Worthiness, Repayment, Cashew Nut Gatherers

INTRODUCTION

The credit worthiness of the cashew nut gatherers is characterized by the reputation of the gatherer, which is determined by the timeliness of payments for previously obtained loans, the quality of reporting, responsibility, competence of management; stable financial condition, ability to produce competitive products and the ability to mobilize funds from different sources (Aja *et al*., 2014). Credit worthiness is a function of ability and willingness to repay borrowed credit. Creditworthiness of cashew nut gatherers is the availability of preconditions for the loan, and timely return of the borrowed fund within the period stipulated in the agreement. The recognition of credit (both from formal and informal sources) as a powerful instrument for the reduction of poverty in the developing countries has led to a multitude of programmes on agricultural credit, cooperative and integrated rural development in the past few decades (Onyenucheya and Ukoha, 2007). On the other hand Ijere (1998) noted the indispensability of credit especially, informal credit in rural agricultural activities like cashew nut gathering, and have identified it as a major factor to energize or motivate other factors of production. In other words, credit acts as a catalyst that activates the engine of growth and enables other factors to mobilize their inherent potentials and, to advance the sectors in the planned or expected direction. It follows therefore that the greater the injection of capital, the higher the propensity of the cashew nut gatherers to move in their given path.

In Nigeria, the financial sector is categorized into three levels: formal, semi-formal and informal financial sectors. The formal financial sectors include the Central Bank, Intermediaries (Commercial Banks, Merchant Banks, Development Banks, Savings Banks Building Societies, Postal Savings Networks, Specialized Financial Institutions, Social Security Schemes, Provident Funds in Insurance Companies), and Capital Markets. The semi-formal entities include savings and credit co-operatives and credit unions – "Semi formal" was defined as having no registration or regular supervisions although the rules of functioning may have been laid down by law (Pastrapa, 2011). Informal financial sector is an unorganized sector that grants short term flows in funds markets, lending and borrowing of small amounts among group members, friends or relatives. It includes activities of finance companies, as well as those of pawnshops and money lenders. It runs the gamut from large wholesale traders financing trade, to village level cashew nut buyers, to petty shopkeepers and itinerant peddlers (Nwachukwu et.al, 2010). The three basic types of informal financial sector were individual money lenders, groups of mutually organized individuals, and partnership firms. The individual money lenders included friends, neigbours relatives, Landlords, Professional money lenders, input dealers, output processors, produce and itinerant traders, market venders, clubs, town unions and saving societies like ESUSU (Atieno 2007).The informal sectors arose to provide security for people through the saving facilities provided. Okonkwo et.al (2018) opined that loans in informal credit market are often advanced on the basis of oral agreements rather than written contracts, with little or no collateral, making default a seemingly attractive option. The informal credit market is highly segmented, marked by long-term exclusive relationships and repeated lending. The interest rate is much higher on average than formal bank interest rates, and also shows significant dispersion, presenting apparent arbitrage opportunities Credit from Informal sources is considered as the survival activity for poor households' cashew nut gatherers. The absence of collateral security gives informal credit sources an edge over its counterpart. Credit from informal sources in most cases is based on some mutually agreed pattern such that funds are assigned to those contributors with the most pressing needs first, unlike in the formal financial market where loans are granted less on a more impersonal basis (Tinh *et al.*, 2010).

Most services of informal finance are client oriented, thus reducing the transaction costs for customers, and making their services attractive despite the explicitly high interest rates. Informal lenders are also able to design their contracts to meet the individual dimensions, requirement and tastes of the borrowers (Aja *et al.* 2014). This contrasts with the formal lender practices, which change relatively low interest rates, but often impose procedures on borrowers that substantially increase their transaction. Credit or loanable fund from informal sources is viewed as more than just another resource such as labour, land to mention but a few. Emanating from its ability to energize or motivate, credit determines access to all of the resources on which farmers depend. This is because it can make the latent potential or underused capacities functional. In such a situation, credit acts as a catalyst or elixir that activates the engine of growth, enables mobilization of inherent potentials of an enterprise (cashew nut gathering) to advance in the planned or expected direction (Oladeebo and Oladeebo, 2008). In the informal financial markets, loan and deposits are often tied enabling individuals to increase their access to credit by improving their deposit performance. This allows participants to enhance their credit worthiness through their savings and repayment record. Godquin (2004) defines repayment performance as the total loans paid on time as stated in the loan agreement. He further added that repayment performance can be further defined in terms of binary variables; based on an arbitrary definition of what constitutes repaying "on time" (a given maximum "grace period" is allowed), while Eze and Ibekwe (2007) measures repayment performance on the degree of arrears.

Over the years, a key issue that has emerged is the question of loan repayment. Loan repayment performance could be influenced by a myriad of factors such as interest rate, unstable prices of agricultural commodities, and the social relations and responsibilities of the borrowers among others (Awoke, 2004, Ugbomeh *et al*., 2008, Tundui and Tundui, 2013;). The question of repayment of informal loan is one of the important issues since it influences credit worthiness of cashew nut gatherers and their access to informal credit (Awunyo and Abankwa 2012; Saleem *et al*., 2014). Repayment rates of informal credit by cashew nut gatherers is influenced by several factors such as personal attributes, area specific attributes(rural or urban) and credit source attributes(friends, money lenders to mention but a few) Udoh, (2005). These attributes influence cashew nut gatherers differently irrespective of their gender such that what might determine the credit access, use and repayment rate of a particular cashew nut gatherer might be different from another cashew nut gatherer. For instance, in studying informal lenders and formal credit groups in Madagascar, Zeller (1994) indicated that informal lenders and group members obtain information about the wealth, indebtedness and income potential of loan applicants and hence ration loan demands a detailed view of total household wealth and leverage of the household. Meanwhile Nwaru (2004) revealed that credit demand was significantly influenced by interest rate, educational level of farmer, amount borrowed previously, farm size and gross savings, while gross income of lender, total cost of lending, source of loan (whether formal or informal), worth of loan application and previous loan repayment significantly influenced access to informal credit.

PROBLEM STATEMENT

The inadequacy and dearth of credit for the sustainable financing of agriculture is one of the greatest problems facing agricultural activities in most developing countries, Nigeria inclusive. Cashew nut gatherers in Nigeria, Abia state and Isuikwuato Local Government Area in particular are faced with myriad of problems that pose challenges to their informal credit worthiness and repayment performance. According to Onoh and Udah (2015), among the problems militating against cashew

nut gatherers in Nigeria, poor post-harvest handling practices and storage have been fingered as a culprit. They observed that poor post-harvest handling and storage have compounded the problem of low productivity and have reduced income generated from gathered cashew nuts which in turn reduced informal credit worthiness of cashew nut gatherers and their repayment potentials. Despite the contribution of the cashew nut gatherers to the country's economy, majority of them are considered credit unworthy by most informal credit institutions and still deny them access to their services on the premise that a good number of gatherers had in the past diverted such credit to unintended ventures and social functions; an impression that has been badly blown beyond its natural proportion (Nwachukwu *et al*., 2010). Over the years, the cashew sub-sector has witnessed tremendous decline in national output contribution. One of the reasons for the decline is lack of a stable national credit policy and paucity of credit institutions especially informal credit institutions which assist cashew nut gatherers (Afolabi, 2010; Nwachukwu, 2010). Many (70%) cashew nut gatherers lack access to informal credit. This reduces the opportunities to participate in cashew nut gathering activities thus reduced their repayment potentials (Hammed and Anikwe, 2005). Also, there is very little informal financial and infrastructural support for cashew nut gatherers. These taken together translate into high transaction cost and low income which constitute serious barrier to informal credit worthiness and repayment performance of cashew nut gatherers (Oladejo, 2015). Most of the cashew nut transactions are carried out on small scale and the quantities traded are highly variable which is as a result of limited access to credit facilities especially from informal sources and seasonal fluctuation in price which have negative effect on informal credit repayment potentials of the cashew nut gatherers (Oladejo, 2015).

Cashew nut gatherers in informal financial sector are faced with the problem of inefficient informal credit management and repayment performance as a result of low literacy level among the gatherers (Iganiga and Asemota, 2008). This is because management and utilization of credit is particularly based on sound education and lack of gatherers with knowledge, skills and energy to put credits to good use are some of the causes of default (Iganiga and Asemota 2008). There have been reported cases of high default rates (Mohammed, 2009). Poor informal credit repayment potentials by the cashew nut gatherers have undesirable effect of tying down funds which would have been used for other purposes. Informal credit repayment problems which bedevil most developing countries also constitute a serious constraint hampering credit mobilization and disbursement in the rural credit sectors in Nigeria. The problem of loan default reduces the lending capacity in informal financial sector. It also denies new applicants access to credit as the cash flow management problems in informal sectors augment in direct proportion to the increasing default problem. In other words, it may disturb the normal inflow and outflow of fund a financial institution has to keep staying in sustainable credit market.

It is in this view that the following research questions arise:

i. What is the amount of credit applied for, amount received and amount repaid by cashew nut gatherers in the study area?
ii. What factors influence informal credit worthiness of cashew nut gatherers in the study area?
iii. What constraints militate repayment of informal credit by cashew nut gatherers in the study area?

Objectives of the Study

The broad objective of this study was to analyze informal credit worthiness and repayment potentials among cashew nut gatherers in Isuikwuato Local Government Area of Abia State, Nigeria. Specifically, the study addressed the following specific objectives:

i. Described socio-economic characteristics of cashew nut gatherers in the study area;
ii. Examined amount of credit applied for, amount received and amount repaid by cashew nut gatherers in the study area;
iii. Determined factors affecting informal credit repayment potentials by cashew nut gatherers in the study area;
iv. Using a scoring index to determined informal credit repayment potentials of cashew nut gatherers;
v. Determined factors influencing informal credit worthiness of cashew nut gatherers in the study area
vi. Identified constraints to repayment of informal credit by cashew nut gatherers in the study area.

HYPOTHESES OF THE STUDY

The following hypotheses were stated in their null forms

HO_1: Cashew nut gatherers in the study area were not credit worthy;

HO_2: Informal Credit repayment potential of Cashew nut gatherers is not influenced by age, educational level, farm income, household size, interest rate, distance between home and sector, farm size and amount of loan obtained.

HO_3: Informal Credit worthiness of Cashew nut gatherers is not influenced by age, educational level, farm income, household size, interest rate, distance between home and sector, farm size, amount of loan obtained and repaid.

RESEARCH METHODOLOGY

Area of the Study

The study was conducted in Isuikwato Local Government Area (LGA) of Abia State. The LGA has its administrative headquarters at Mbalano. Isuikwato Local Government Area is located between latitudes $5^0$41'N and $5^0$46'N of the Equator and Longitudes $7^0$41'E and $7^0$45'E of the Greenwich Meridian. Isuikwuato LGA shares boundary with other LGAs in Abia State namely Bende, Umunneochi and Umuahia North to the East, North and South respectively. It also shares boundary with Okigwe LGA of Imo State to the West. The LGA has about 25 autonomous communities with a population of 114,442 persons comprising of 56,831 males and 57,611 females (NPC, 2006). Isuikwuato L.G.A experience annual temperature range of between 20^0C and 30^0C and annual rainfall of between 2000mm and 2500mm. It is characterized by the dry dust, laden Northeasterly winds, which blow across the country during the dry season (mid-October to March). The relative humidity is usually high throughout the year between 70-80% with January to March as the hottest months. The area has undulating topography and is typically agrarian producing food crops like yam, maize, cassava, and melon alongside cash crops like cashew and oil palm. Livestock such as poultry, sheep and goats are kept by male and female farmers in a small scale.

Sampling Technique

The study made use of multistage random sampling technique. First stage involved random selection of three (3) autonomous communities from Isuikwuato LGA. Second Stage involved random selection two villages from each of the selected autonomous communities which gave a total of six (6) villages. Third stage involved random selection of two informal credit outfits in each of the selected villages which gave a total of twelve informal credit outfit. A list of cashew nut gatherers who had benefited from the selected informal credit outfits was drawn. From the list, five (5) beneficiaries were randomly selected which gave a total sample size of sixty (60) cashew nut gatherers.

Data Collection

The primary data were used for the study. Primary data were collected with the use of pre-tested semi-structured questionnaire. Data were collected with the help of trained enumerators. Data of interest included the socio – economic characteristics (age, education, income, marital status, household size, working experience, membership of farmers associations, access to credit from informal sources and extension contact). In addition, data on amount of credit demanded, received from informal sources, credits amount of credit repaid so far, amount outstanding, interest charged on borrowed funds and duration of loan were collected.

Method of Data Analysis

The data for this study were realized using a number of statistical tools such as descriptive statistics (means frequencies and percentages) and inferential statistics (multiple regression and discriminant analysis). Descriptive statistics such as frequencies, means, and percentages was used to realize objectives (i), (ii) and (vi). Objectives (iii) and (v) were analyzed using multiple regression while Objective (iv) were analyzed with discriminant function.

2.5 Model Specification

2.5.1 Multiple Regression Model

The regression model is explicitly expressed as;

$Y = F (X_1, X_2, X_3, X_4, X_5 \ldots\ldots X_n, ei)$

Y = repayment rate

X1 = Age (years)

X2 = amount of loan borrowed (Naira)

X3 = Educational level (years)

X4 = Gathering Experience (years)

X_5 = Household Size

X6 = loan period (Years)

X7 = Distance between home and source of loan (Km)

X8 = annual income (Naira)

X9 = interest rate (%)

ei = error term

The four functional forms of the Model (linear, exponential, double log and semi log) were fitted with the data. The functional forms are explicitly written in mathematical terms as follows:

Linear form

$Y= b_o + b_1 x_1 + b_2 x_3 + b_4 x_4 + b_5x_5 + b_6+x_6 + b_7 x_7 +b_8 x_8 +b_9 x_9 + ei$

Semi-log function

$Y =\log b_o + b_1\log x_1 + b_2\log x_3 + b_4\log x_4 + b_5\log x_5 + b_6 \log x_6 + b_7\log x_7 +b_8\log x_8 +b_9\log x_9 + ei$

Double log function

$\text{Log } Y =\log b_o + b_1 \log x_1 + b_2 \log x_3 + b_4 \log x_4 + b_5 \log x_5 + b_6 \log x_6 + b_7 \log x_7 +b_8 \log x_8 +b_9 \log x_9 + ei$

Exponential function

$\text{Log } Y= b_o + b_1 x_1 + b_2 x_3 + b_4 x_4 + b_5 x_5 + b_6+x_6 + b_7 x_7 +b_8 x_8 +b_9 x_9 + ei$

The lead equation was selected based on statistical and econometric reasons such as number of significant coefficients, magnitude of the f-ratio and R^2, and the conformity of the variables to *a priori*-expectation.

Discriminant Function

The discriminant analysis was used to classify the cashew nut gatherers into two mutually exclusive and exhaustive categories. Using the loan repayment rate as a basis, loan beneficiaries were classified into two groups. Group one consisted of gatherers who had repaid more than 50% of the borrowed credit whereas group two consisted of gatherers who have not repaid up to 50% the borrowed credit (Onyenucheya and Ukoha, 2007).

$Zi = b0 + b_1X_1 + b_2X_2 \text{ ……..} b_nX_{ni}$

Where

Zi = The ith individual's discriminant score

b_1 =The discriminant coefficient of the ith variable

X_{ni}= The ith individual of nth individual variable

For the classification procedure, let each individual's discriminant score Zi be a function of the independent variables that is:

$Zi = b0 + b_1X_1 + b_2X_2 \ldots\ldots\ldots..b_nX_{ni}$

The classification procedure is as follows:-

If cashew nut gatherers who repay their credit is $\geq$50%, classify individual I as belonging to group I (repaid credit), and if < 50%, classify individual I as belonging to group II (non repaid credit). The classification boundary is then the locus of points where:

Zcrit = The critical value for the discriminant score

Where:

$b0 + b_1X_1 + b_2X_2 \ldots\ldots\ldots..b_nX_{ni} = Zcrit$

The regressors are

X1 = Age (years)

X2 = amount of loan borrowed (Naira)

X3 = Educational level (years)

X4 = gathering experience

X5 =Value of assets (Naira)

X6 = loan period (Years)

X7 = Distance between home and source of loan (Km)

X8 = annual income (Naira)

X9 = interest rate (%)

RESULTS AND DISCUSSION

Socio Economic Characteristics of the Respondents

Age of Respondents

The distribution of cashew nut gatherers according to their age is presented in Table 1. The Table shows that 35.00% of the respondents were within the ages of 41 and 50 years while 25.00% of them were between 30 and 40 years. The mean age of the respondents was 36.04years. This implies that majority (85.00%) of the cashew nut gatherers were between 30 and 50 years suggesting that the cashew nut gatherers were within their active productive work force. Young and middle aged cashew nut gathers are more credit worthy and their repayment of informal credit is high because they are adventurous, economically and entrepreneurially active to explore new avenues for business opportunities (Ajagbe *et al*., 2007). Informal financial sectors are willing to disburse credit to young and active cashew nut gatherers knowing they can effectively shoulder the rigors and tedium involved in cashew nut gathering (Onyenucheya and Ukoha, 2007). Also, cashew nut gatherers within this age bracket will perform better in informal loan repayment due to their ability to take advantage of business opportunities as they are mentally and physically active and more productive than aged ones (Osondu *et al*., 2015).

Table 1: Distribution of the Cashew Nut Gatherers Isuikwuato Local Government Area (LGA) of Abia State

Age (years)	Frequency	Percentage
Less than 31	15	25.00
31 – 40	15	25.00
41 – 50	21	35.00
51 – 60	7	11.67
Above 60	2	3.33
Total	60	100.00
Mean (years)	36.04	

Source: *Field Survey Data, 2019*

Marital Status

The distribution of the cashew nut gatherers according to marital status is shown in Table 2. The Table revealed that 61.67% of the respondents were married, while 23.33% others were single. This implies that married cashew nut gatherers are relatively more stable, compelling informal credit sources to view them as easily identifiable and more credit worthy. This is in line with the findings of Adegboye *at al*. (2008) that married cashew nut gatherers are more involved in informal credit demand as a result of the need to supplement their family's income for better living. Since married cashew nut gatherers are likely to have a larger family size, they will have higher expenses than single farmers. Therefore single farmers are likely to have better repayment ability than married farmers.

Table 2: Distribution of the Cashew Nut Gatherers According to their Marital Status in Isuikwuato LGA of Abia State

Marital status	Frequency	Percentage
Single	14	23.33
married	37	61.67
Widowed	6	10.00
Separated	3	5.00
Total	60	100.00

Source: *Field Survey Data, 2019*

Educational Level

The distribution of cashew nut gatherers according to their educational level is shown in Table 3. The table revealed that 51.67% of the respondents had secondary school education, while only 21.67% of them had primary school education. Cumulatively, 91.67% of the cashew nut gatherers had one form of formal educational or the other. This implies that cashew nut gatherers in the study area had received formal education and are likely to have adequate knowledge of informal credit management, and thereby making them credit worthy and increased their repayment potentials. Literate cashew nut gatherers repay more of their credits obtained from informal sources than illiterate ones, having understood the advantages of prompt credit repayment. High level of formal education suggests possession of high literacy level, which is an advantage in appreciating procurement of credit (informal microcredit) as literate borrowers have enhanced capacity to repay loans on sustainable basis (Eze, 2013).

Table 3: Distribution of the Cashew Nut According to Educational Level in Isuikwuato Local Government Area (LGA) of Abia State

Educational level	Frequency	Percentage
No formal education	5	8.33
Primary education	17	28.33
Secondary education	31	51.67
Tertiary education	7	11.67
Total	60	100.00

Source: *Field Survey Data, 2019*

Gathering Experience

The distribution of the cashew nut gatherers according to years of cashew nut gathering experience is shown in Table 4. The Table shows that 31.67% of the cashew nut gatherers had between 6 and 10 years of farming experience. The mean years of cashew nut gathering experience was 9.08 years. This implies that cashew nut gatherers in the study area were established and knowledgeable in cashew nut gathering activities, because the number of years spent cashew nut gathering is an indication of the practical knowledge acquired on how to overcome inherent problems involved in cashew nut gathering and this increased their utilization of borrowed funds and increased their repayment performance for sustainable development. This agreed with Olomola (2009) that years' experience positively influenced efficiency due to prudent allocation of resources overtime arising from acquired practical knowledge through trial and error over time.

Table 4: Distribution of the Respondents According to Cashew Nut Gathering Experience in Isuikwuato LGA of Abia State

Gathering Experience	Frequency	Percentage
1-5	17	28.33
6-10	19	31.67
11-15	9	15.00
16-20	9	15.00
21 and above	6	10.00
Total	60	100.00
Mean (years)	9.08	

Source: Field Survey data, 2019

Household Size

Table 5 shows the distribution of cashew nut gatherers according to their household size. The Table reveals that 33.33% of the respondents in the study area had household size of between 4 and 6 persons while 28.33% others had household sizes of between 7 and 9 persons. The mean household size of the respondents was 6.30 persons respectively. Large household size implies provision of family labour in cashew nut gathering activities to increase quantity of cashew nut gathered which translate to sustainable increased income, credit worthiness and repayment potentials of informal credit of cashew nut gatherers. Also, large family sizes could likely raise their total expenses and negatively affect their credit worthiness and loan repayment ability of cashew nut gatherers. Afolabi (2008) found a positive relationship between family size and loan repayment and attributed it to the extensive utilization of family labour in the cashew nut gathering activities.

Table 5: Distribution of the Cashew Nut Gatherers According to Household Size in Isuikwuato (LGA) of Abia State

Family size	Frequency	Percentage
Less than 4	8	13.33
4-6	20	33.33
7-9	17	28.33
10-12	8	13.33
Above 12	7	11.67
Total	60	≈100.00
Mean	6.30	

Source: Field Survey Data, 2019

Income Level of Respondents

The distribution of the cashew nut gatherers according to their monthly income is displayed in Table 6. The Table reveals that 28.33% of the respondents earned annual income between ₦76, 000.00 and ₦100, 000 while 21.67% of them earned between 51,000.00 and 75,000.00 and above 251,000.00. The mean monthly income of the cashew nut gatherers was ₦57, 125.00. This implies that, the cashew nuts can be easily liquidated into money and recovers the credit risk. The result agreed with Ezihe *et al*. (2011) who opined that increased monthly income will boost the confidence of borrowers in agricultural activities thereby increase informal credit worthiness and repayment. Also, Gebre-Egziabher *et al.* (2018) opined that income generated from agricultural activities was used increase the informal credit repayment capacity of the borrowers.

Table 6: Distribution of the Respondents According to Monthly Income in Isuikwuato Local Government Area (LGA) of Abia State

Monthly Income level (₦)	Frequency	Percentage
25,000<	7	11.67
25,000-50,000	10	16.67
51,000 – 75,000	13	21.67
76,000 – 100,000	17	28.33
>100,000	13	21.67
Total	60	100.00
Mean (₦)	57,125.00	

Source: *Field Survey Data, 2019*

Membership of Farmers Association

The distribution of the cashew nut gatherers according to membership of farmers association is presented in Table 7. The table showed that 70.00% of the cashew nut gatherers belonged to cooperative association and 30.00% of them did not belong to cooperative association. Membership of cooperative associations improves social capital of the cashew nut gatherers. This implies that Membership of organization in form of cooperatives and age grade helps to ensure members' access to credit and

productive inputs on a sustainable basis. This could guarantee higher farm productivity and more odds of having fewer defaulters in loan repayment. Also, as reported by Oladeebo and Oladeebo, (2008) **c**ooperative societies possess some elements of social networks that are vital for enhancing group dynamics, financial support and farm productivity, hence could improve their credit worthiness and loan repayment odds. On the contrary, Olotomola, (2002) obtained a negative relationship between membership of farmers association and loan defaults. The negative sign of the coefficient could be linked to very poor membership of organization by people. This condition is capable of making farmers to have less probability of loan repayment as they often lack the necessary inputs to boost their production frontier.

Table 7: Distribution of Cashew Nut Gatherers According to Membership of Cooperative in Isuikwuato Local Government Area (LGA) of Abia State

Membership of Farmers Association	Frequency	Percentage
Yes	42	70.00
No	18	30.00
Total	60	100.00

Source: Field Survey Data, 2019

Loan Size to Respondents

The amount of loan applied for and disbursed to cashew nut gatherers by informal credit sources is showed in Table 8. The table reveals that 23.33% of the cashew nut gatherers applied and received informal credit of less than less that ₦26, 000 and between ₦51, 000.00 and ₦75000.00 from informal credit institutions. The mean amount applied and received was ₦42, 8333.33. This implied that the low amount of credit applied and amount received may be due to the amount of loan fund available. This credit obtain could be used to procure additional inputs resources, invest in their various business to increase income. The low amount received indicated that loan portfolio is small compelling funds to be rationed among successful applicant (Osondu, 2015).

Table 8: Distribution of Cashew Nut Gatherers According to Amount Applied for and Received in Isuikwuato Local Government Area (LGA) of Abia State

Loan size	**Amount Applied for**		**Amount Received**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
<26,000	14	23.33	14	23.33
26,000-50,000	10	16.67	10	16.67
51,000 – 75,000	14	23.33	14	23.33
76,000 – 100,000	12	20.00	12	20.00
>100,000	10	16.67	10	16.67
Total	60	100.00	60	**100.00**
Mean ₦	42,8333.33		42,8333.33	

Source: *Field Survey Data, 2019*

3.2.2 Loan

Repayment

The distribution of the cashew nut gatherers according to the amount repaid is shown in Table 9. The Table shows that 36.67% of the cashew nut gatherers had repaid informal credit amounts less than ₦25, 000 respectively. Also, 23.33% of the cashew nut gatherers had repaid amounts between ₦25, 000 and ₦50, 000. Summarily, about 39.99% of the cashew nut gatherers had repaid informal loan amounts above ₦50, 000. This is an indication that the cashew nut gatherer's loan repayment potential is relatively high in the study area. This confirms the report of (Oloyode 2008) that the repayment performance of borrowers in informal financial sectors is highly appreciable.

Table 9: Distribution of Cashew Nut Gatherers according to Amount of Credit Repaid in Isuikwuato Local Government Area (LGA) of Abia State

Loan size ₦	Amount repaid	% Repayment
<26,000	22	36.67
25,000-50,000	14	23.33
51,000 – 75,000	11	18.33
76,000 – 100,000	8	13.33
>100,000	5	8.33
Total	60	100.00
Mean ₦	40,941.67	

Source: *Field Survey, 2019*

OLS Regression Estimates of Credit Repayment Potentials of Cashew Nut Gatherers in Isuikwuato LGA

The result of the OLS multiple regression estimates of factors that influenced loan repayment potentials of cashew nut gatherers in Isuikwuato LGA of Abia State, Nigeria is shown in Table 10. The result shows that the four functional forms (linear, exponential, semi-log and double log arithmetic) of the Ordinary Least Square (OLS) regression were statistically significant at 1.0% probability level implying that any of the functional forms was adequate in estimating and explaining the variations in the informal credit repayment potentials of cashew nut gatherers in the study area. Double-log function provided the best fit model and was chosen as the lead equation based on having the highest value of the coefficient of multiple determination (R^2), f-ratio value and having more significant variable coefficients. The F-value (788.58) was significant at 1.0% level implying that the model was a good fit and that the joint effects of all the included variables were significant. The coefficient of multiple determination (R^2) value of 0.780 indicates that the explanatory variables accounted for only 78.00% of the total variation in loan repayment by the cashew nut gatherers. From the result, out of eleven variables, six variables were significant. The variables were educational level, household size, annual income, farming experience, interest rate, distance and amount of credit borrowed. Specifically, the coefficient (1736.541) of education was directly related to informal credit repayment potentials of cashew nut gatherers and statistically significant at 1.0% probability level. This implied the higher the level of education attained by the cashew nut gatherers the higher their repayment potentials as formal education is expected to boost the response of cashew nut gatherers to improved technologies and innovation that could enhance better returns from cashew nut gathering activities which will encourage loan repayment. This confirms the finding Oladeebo and Oladeebo (2008) that

level of education attained was one of the major factors that positively and significantly influenced loan repayment. The result negates the findings of Femi and Ayotunde (2014) that level of education attained is not necessarily a criterion for prompt repayment performance.

The coefficient (20727.708) of household size was positive and significant at 1.0% alpha level. This implied that increase in household size increased informal credit repayment potential of cashew nut gatherers. Cashew nut gatherers with larger family especially those with higher number of adult children would to have enough family labour for cashew nut gathering activities. This would likely facilitate informal loan repayment. This is in line with *a priori* expectation and conforms the findings of Isito *et al* (2016) that large household size could be a source of cheap family labour especially during peak of cashew nut gathering activities when cost of hired labour is high. In this aforementioned scenario, such household head will have high propensity to save lots of money that could have been used for hired labour and use it offset his/her loan.

The coefficient (1.723) of monthly income was positive indicating a direct relationship between Cashew nut gatherers farmers and loan repayment and significant at 1.0% alpha level. This implies that the greater the income from cashew nut gathering activities the higher the rate of loan repayment by the cashew nut gatherers. It means that cashew nut gatherers with higher income are more likely to repay their loans than those with lower farm incomes. This is in line with *a priori* expectation and confirms the findings of Abula *et al.* (2013) who obtained a positive relationship between farm income and repayment performance of rural farmers' loan beneficiaries of microfinance banks in Kogi State. Also, Isito *et al.* (2016) opined that increase in the net farm income of the farmers increases the likelihood that the farmers will repay the loan obtained within the stipulated time.

The coefficient (-9171.109) of interest rate was negative and significant at 5.0% level of significance. This implied that increase in interest rate reduces that amount repaid by rural women arable crop farmers. This confirms *a priori* expectations and in agreement with Nwaru (2004) and Mpuga (2008) who reported that interest rate played a significant and negative role in determining the volume of credit repaid. Also, Bob *et al* (2018) opined that higher interest rate increases the likelihood of loan repayment default as the cost of servicing the loan increases. On the contrary, Mgbasonwu and Umejiaku (2018) and Akerele (2016) opined that collection loans with higher interest rates increased the repayment. The coefficient of (-1744.324) of distance between dwelling place of Cashew nut gatherers and informal credit sector was inversely related to informal loan repayment and was statistically significant at 5.0% confidence level. This is not contrary to a *priori* expectation and indicates that the greater the distance of the informal credit sector, the lower the repayment rate. This is because of the cost implication of accessing the informal sector to make payment each time. However, the nearer a client was to a credit sector, the better the repayment rate (Osondu *et al*., 2015). The coefficient of (4805.285) amount of credit obtained had a direct relationship with repayment potentials of Cashew nut gatherers and statistically significant at 10.0% probability level. This implied that a unit increase in volume of loan borrowed will result in 4.40% increase in repayment. This is possible due to the advantage in the economics of scale which comes about trough the expansion of purchase (purchase of cashew nut). Increase volume of credit obtained by rural women arable crop farmers may enable farmers to adopt agricultural innovations which translate to increase in the level of income and hence high level of loan repayment (Afolabi, 2010).

Table 10: OLS Regression Estimates of Factors Influencing Informal credit Repayment Potentials of Cashew Nut Gatherers in Isuikwuato LGA of Abia State

Variables	Linear+	Exponential	Double-log	Semi log
Constant	140177.347	7.917***	2.057	699107.425***
	(1.419)	(6.550)	(0.785)	(3.346)
Age	-1939.804	0.036	0.652**	60670.570**
	(-0.616)	(0.938)	(2.140)	(2.496)
Educational level	1736.541***	0.027*	0.223*	10154.447
	(3.482)	(1.854)	(1.517)	(0.866)
Household Size	20727.708***	0.333*	0.152	9349.603
	(5.337)	(1.758)	(0.937)	(0.721)
Annual Income	1.723***	2.470E-005*	0.093	4814.355
	(3.620)	(1.889)	(0.695)	(0.452)
Gathering Experience	12822.541	0.156**	0.227*	16436.293*
	(0.279)	(2.068)	(1.796)	(1.630)
Loan repayment period	28696.239	0.159	0.614	97678.159
	(0.531)			
Interest on Credit	9171.109**	0.120*	0.978	62672.788
	(2.679)	(1.795)	(1.420)	(1.141)
Distance to Centre	1744.324**	0.017	0.007	1469.902
	(1.966)	(0.521)	(0.098)	(0.276)
Amount of Credit Borrowed	4805.285*	0.101	0.334***	34667.903***
	(1.865)	(1.132)	(3.038)	(3.953)
R^2	0.780	0.667	0.714	0.710
Adjusted R^2	0.736	0.636	0.682	0.673
F-ratio	788.58***	233.593***	371.230***	328.388***

Source: *Computation from field survey data, 2019.*
+ indicates lead equation
***, **, *: indicates variable that are statistically significant at 1.0%, 5.0% and 10% alpha levels respectively.
Figures in parenthesis are t-ratios

Classification Performance of the Estimated Discriminant Function

Table 11 showed the Classification Performance of discriminant estimated function. The classification function was predicted using a sample of sixty (60) cashew nut gatherers. Based on the informal credit repayment parameters, the discriminant function classified the cashew nut gatherers into two groups. The grouping of cashew nut gatherers was based on the rate of loan repayment. Those whose credit repayment rate were greater than or equal to 50 percent (U≥50) were assigned to group one and are recorded as credit worthy, while the gatherers who repaid below 50 percent (U< 50) were assigned to group two and are recorded as non-credit worthy. Based on the criteria, the cut-off point for the purpose of classification was taken as the mid-point of total discriminant score for each group. According to Ezeh (2003), discriminant function analysis itself assumes equal cost of misclassification. The table shows that 44 (73.33%) cashew nut gatherers were found to be relatively credit worthy (group one) while the remaining 16(26.67%) were relatively non-credit worthy (group two). This agreed with Osondu *et al.* (2015) who observed that 72.53% and 27.47% credit and non-credit worthy farmers in Ohafia LGA of Abia state.

With respect to the repayment rate, it was found that out of the 60 cashew nut gatherers who accessed informal credit, 40 cashew nut gatherers' borrowers which constitute 90.91% were classified as credit worthy contrary to the initial classification which was 43 (73.33%) cashew nut gatherers to be relatively credit worthy. Also the model found 56.25% of the cashew nut

gatherer borrowers to be non-credit worthy as against the initial number of 16(26.67%) gatherers, who, based on repayment rate were found to be relatively non-credit worthy. The proportion of credit worthy cashew nut gatherers erroneously classified as being non-credit worthy formed about 43.75% On the other hand the proportion of non-credit worthy cashew nut gatherers erroneously classified as being credit worthy formed about (9.09%) of the 44 credit worthy cashew nut gatherers subjected to the classification. These kinds of error constitute the greatest risk in agricultural credit administration. This result is in conformity with the findings of (Osondu *et al*., 2015) that had different prediction of group membership after the application of the model. The totality of both may be high enough to reduce the amount of loan fund available for subsequent operations. Misclassification errors may lead to loan shrinkage, ineffectiveness and liquidation. The classification performance of the function was 73.30% which also compared favourably with Osondu *et al* 2015 who observed 84.13% classification performance. The implication is that the information provided by the discriminant analysis will help make recommendation to informal credit institutions in order to avert default.

Table 11: Discriminant Classification for Credit and Non-Credit Worthy

Variable	Number of cases	Predicted Credit worthy	Group Membership 2 Non-credit worthy
Group 1(credit worthy)	44	40(90.91%)	4(9.09%)
Group 2 (non-credit worthy)	16	9(56.25%)	7(43.75%)

Source: Source: *Computer analysis of the field survey data (2019) using SPSS*
Percentage of original grouped cases correctly classified = 73.30%

Assessment of Repayment Performance of Cashew Nut Gatherers

Table 12 showed linear discriminant function estimates of loan repayment performance of cashew nut gatherers. The Table shows that the variables entered into the functions were able to discriminate between credit worthy cashew nut gatherers and non-credit worthy cashew nut gatherers. The variables tried on this model were age, household size, marital status, educational level, gathering experience, membership of cooperative societies, distance to informal credit sources, annual income and interest. The table showed that the estimated centroid for credit worthy cashew nut gatherers was 0.476 and that of non-credit worthy was -0.825. This implied that any variable score that is closer to 0.476 suggested credit worthiness and any closer to –0.825 suggested non-credit worthiness. The cut-off point (-0.175) for the purpose of classification was taken as the midpoint of total discriminant score for each of the group (Credit worthy and non-credit worth) because discriminant model assumes equal cost of misclassification (Ezeh, 2003).

Table 12 Standardizes Canonical Discriminant Function Coefficient of Variables

Variable	Discriminant Coefficient
Age	-0.522
Educational level	0.732
Household Size	0.348
Annual Income	0.891
Gathering Experience	-0.504
Loan repayment period	0.420
Interest on Credit	0.262
Distance to Centre	-0.349
Amount of Credit Borrowed	0.279
Group centroid:	
Credit worthy	0.
Non-credit worthy	-0.
Cut-off point	-0

Source*:* Source: *Computer analysis of the field survey data (2019) using SPSS*

Relative Contributions of the Variables to the Total Discriminant Score

Table 13 shows the contributions of the variables to the total discriminant score. The result showed that the variables were effectively ranked according to their discriminating contributions. The values in the table indicated that annual income was the most important discriminating variable between credit worthiness and non-credit worthiness of cashew nut gatherers followed by interest rate, educational level, amount borrowed, cashew nut gathering experience, membership of cooperative society, household sizes, distance from informal credit sources, age and marital status. The positive signs obtained for annual income, educational level, amount borrowed, cashew nut gathering experience and membership of cooperative society indicated that the cashew nut gatherers stand the chance of belonging to credit worthy group as these variables increases. The negative signs obtained for interest rate, household sizes, distance from informal credit sources, age and marital status indicated that increase in these variables increased the chances of cashew nut gatherers belonging to non-credit worthy group.

Table 13: Pooled Within-Groups Correlation between Discriminating Variables and Standard Canonical Discriminant Functions

Variables	Function
Annual income	0.894
Interest	-0.861
Educational level	0.685
Amount of loan	0.553
Cashew nut gatherers experience	0.541
Cooperative societies	0.525
Household size	-0.354
Distance	-0.302
Age	-0.284
Marital status	-0.204

Source: *Computer analysis of the field survey data (2019) using SPSS*

Statistical Test of Significance

The statistical test of significance of the estimation function is presented in Table 14. The Table indicates that the Eigen value of the model was 3.861. This implied existence of strong relationship between the discriminant functions and the group variables in classifying the cashew nut gatherers into credit worthy and non-credit worthy groups using the theorized variables. The result compared positively with Okpara *et al*. (2013) who obtained Eigen value of 2.167. The Table also shows a relatively high canonical correlation coefficient of 0.904 and low Wilks' Lambda value of 0.274. The low Wilks' Lambda (0.274) indicates that the model provided high significant amount of information required for classification of cashew nut gatherers into credit worthy and non-credit worthy groups. This result agreed with Nto and Mbanaso, (2014) who observed a canonical correlation coefficient of 0.870 and Wilks' Lambda value of 0.243. Its significant level was shown by the chi-square statistic of 11.675 which was significant at 1.0% alpha level indicating that all the discriminant coefficients were not equal to zero, thereby confirming that the estimated function can be used to discriminate between credit worthy and non-credit worthy rural women arable crop farmers as originally defined and that the data have good fit.

Table 14: Statistical Test of Significance for the Discriminant Function Coefficient5.

Eigen value	0.168
Canonical correlation	0.637
Wilks' lambda	0.904
Chi-square	11.675
Degree of freedom	13

Source: Computer analysis of the field survey data (2019) using SPSS

Determinants of Credit Worthiness of Cashew Nut Gatherers

The OLS Regression estimates of Factors Influencing Informal credit worthiness of cashew nut gatherers is presented in Table 15. The exponential functional form provided the best fit model. The F-value (88.58) was highly significant at 1.0% level implying that the model was a good fit and that the joint effects of all the included variables were significant and R^2 and adjusted R^2 value of 0.953 and 0.942 which implies that the variables in the model were able to explain 95.30% of the total variations of the determinants of loan repayment of loan repayment of rural women arable crop farmers. From the result, out of eleven variables, six variables were significant. The variables were educational level, household size, annual income, farming experience, interest rate, distance and amount of credit borrowed.

Table 15: OLS Regression estimates of Factors Influencing Informal credit Repayment Potentials of

Variables	Linear	Exponential+	Double-log	Semi log
Constant	140177.347	7.917***	2.057	699107.425***
	(1.419)	(6.550)	(0.785)	(3.346)
Age	1939.804	0.873***	0.652**	60670.570**
	(0.616)	(3.938)	(2.140)	(2.496)
Educational level	1736.541	0.812**	0.223*	10154.447
	(1.482)	(2.854)	(1.517)	(0.866)
Household Size	20727.708	0.333	0.152	9349.603
	(1.337)	(1.358)	(0.937)	(0.721)
Farm Income	1.723*	2.470E-005***	0.093	4814.355
	(1.620)	(2.889)	(0.695)	(0.452)
Gathering Experience	12822.541**	0.558*	0.227*	16436.293
	(2.079)	(1.608)	(1.796)	(1.630
Interest on Credit	9171.109*	0.120	0.978	62672.788
	(1.679)	(1.395)	(1.420)	(1.141)
Distance to Centre	1744.324	0.899**	0.007	1469.902
	(0.666)	(2.521)	(0.098)	(0.276)
Membership Of Cooperative	4805.285	0.329**	0.334***	34667.903***
	(0.066)	(2.132)	(3.038)	(3.953)
R^2	0.770	0.867	0.753	0.715
Adjusted R^2	0.756	0.836	0.742	0.676
F-ratio	88.58***	223.593***	71.230***	28.388***

Source: *Computation from field survey data, 2019.*
+ indicates lead equation
***, **, *: indicates variable that are statistically significant at 1.0%, 5.0% and 10% alpha levels respectively.
Figures in parenthesis are t-ratios

Constraints to loan repayment by farmers

The results in Table 16 reveals that 61.67% of cashew nut gatherers where constrained by high interest rate while 55% and others were constrained short period of repayment and low market price. This implies that while all were severe constraints some were severer than others. Abdu *et. al* (2015) in their studies reported high interest rate as one of the major constraints militating against loan repayment.

Table 16: Constraints to Loan Repayment by Cashew Nut Gatherers

Problems	*Frequency	Percentages
High interest rate	37	61.67
Short period of repayment	33	55.00
Late disbursement	24	40.00
Large family size	20	33.33
Low market price of farm produce	33	55.00
Low profit margin	34	56.67

Source: *Field survey data, 2019*

SUMMARY, CONCLUSION AND RECOMMENDATION

Summary

The study analyzed informal credit worthiness and repayment potentials among cashew nut gatherers in Isuikwuato Local Government Area of Abia State, Nigeria. Specifically, the study described socio-economic characteristics of cashew nut gatherers ; examined amount of credit applied for, amount received and amount repaid by cashew nut gatherers; determined factors affecting informal credit repayment potentials by cashew nut gatherers; used scoring index to determined informal credit repayment potentials of cashew nut gatherers; determined factors influencing informal credit worthiness of cashew nut gatherers; identified constraints to repayment of informal credit by cashew nut gatherers. Multistage random sampling technique was used in the selection of sixty (60) cashew nut gatherers. The primary data used for the study were collected with pre-tested semi-structured questionnaire and subjected to descriptive statistics, multiple regression and discriminant analysis. The socioeconomic characteristics shows that the mean age of the cashew nut gatherers was 36.04years and 61.67% of the cashew nut gatherers were married respectively. Cumulatively, 91.67% of the cashew nut gatherers had one form of formal educational or the other. The result also shows that the mean years' cashew nut gathering experience was 9.08 years while their mean household size of 6.30 persons respectively. The result also shows mean monthly income of the cashew nut gatherers was ₦57, 125.00 and 70.00% of the cashew nut gatherers belonged to cooperative association. The mean amount applied and received respectively were ₦42, 833.33 while the mean amount applied was ₦ 40,941.67. The OLS regression estimates of factors that influenced loan repayment potentials of cashew nut gatherers in Isuikwuato LGA of Abia State posited an F-value 788.58 which was significant at 1.0% level R^2 value of 0.780 indicates. It shows that education, household size, monthly income, interest rate, distance between dwelling place of Cashew nut gatherers and informal credit sector and amount of credit borrowed were significant at different levels. Classification Performance of discriminant estimated function shows that 44 (73.33%) cashew nut gatherers were found to be relatively credit worthy (group one) while the remaining 16 (26.67%) were relatively non-credit worthy (group two). The linear discriminant function estimates of loan repayment performance of cashew nut gatherers show the variables entered into the functions were able to discriminate between credit worthy cashew nut gatherers

and non-credit worthy cashew nut gatherers with the estimated centroid value as 0.476 and that of non-credit worthy was -0.825. The contributions of the variables to the total discriminant score shows that annual income was the most important discriminating variable between credit worthiness and non-credit worthiness of cashew nut gatherers followed by interest rate, educational level, amount borrowed, cashew nut gathering experience, membership of cooperative society, household sizes, distance from informal credit sources, age and marital status.

Conclusion

The Level of Significance of the Contributing Variables shows that household size, educational level, gathering experience, membership of cooperative, monthly income, amount of credit borrowed and interest discriminated between credit and non-credit worthy farmers. The statistical test of significance of the estimation function posited an Eigen value of 3.861, canonical correlation coefficient of 0.904 and low Wilks' Lambda value of 0.274. The OLS Regression estimates of Factors Influencing Informal credit worthiness of cashew nut gatherers posited an F-value 88.58, R^2 and adjusted R^2 values of 0.953 and 0.942. The result shows that age, education, cashew nut gathering experience, monthly income, membership to social group and distance were significant at different levels. The informal credit repayment potentials of cashew nut gatherers was constrained high interest rate (61.67%), short period of repayment (55.00%) and low market price (55.00%).

Recommendations

i. Agricultural activities in general are seasonal; hence informal credit providers have to be conscious with regard to the timely provision of credit.

ii. The problem of high interest rate of informal credit institutions should be looked upon and addressed by the government for sustainable development and sustainability. This will enable the indigent cashew nut gatherers to patronize informal credit institutions available to them.

iii. Informal financial institutions should ensure timely disbursement of credit to young, experienced and better educated cashew nut gatherers who are more likely to utilize resources efficiently, and repay borrowed credit promptly.

iv. Majority of the respondents encountered the problem of short repayment period. Informal credit institutions should therefore synchronized credit with periods of farm harvest.

v. To ensure high repayment rate and high level of credit worthiness of beneficiaries, optimal interest rate policies that make for optimal credit provisioning and minimize the risk composition of the credit provider should be pursued.

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