EFFECT OF CREDIT ON FOOD CROP PRODUCTION AMONG SMALL SCALE FARMERS IN ONDO STATE

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ABSTRACT

Nigeria's food problem has worsened over time judging from the staggering food import bill that has continued unabated. The smallholder agriculture is considered strategic in order to alleviate this intractable problem of food insecurity. This would however, require measures such as supplies of credit to ameliorate their marginal economic conditions and thereby increasing their productivity.

Hence variations of credit programme have been used as policy action directed towards improving the productivity of the small-scale farmers. In spite of this, there exists a considerable lack of consensus regarding their effectiveness. This may be probably due to the magnitude of credit requirements.

This study therefore investigated the effect of credit on the level of food production of small-scale farmers in Ondo State. Specifically it assessed the effect of credit size on farm output, examined the socio economic characteristics of farmers using credit, measured farmers perception to credit use and highlighted the constraints to credit use.

Primary data were collected from 200 small scale farmers through the use of standardized interview schedules. The respondents were selected using multi-stage random sampling method. In the first stage, five Local Government Areas (LGAs) were selected from existing Eighteen LGA's of Ondo State by random sampling. Two communities were further selected from each of the selected LGAs from the list obtained at the various Local Government offices. Out of the list of farmers obtained, twenty farmers utilizing credit were selected from each of the selected communities making a total of two hundred respondents.

The data obtained was subjected to descriptive analytical techniques such as frequency and means on the socio- economic characteristics of the farmers. The

relationship of credit size to farmers' socio – economic characteristic was tested with Pearson Product Moment Correlation. While Multiple Regression Analysis was the predictive tool employed to estimate the effect of variables that influenced credit size used by farmers and the determinants of farm output. A 22 variable item on 5 point Likert Scale was adopted to measure farmers perception of credit.

Findings reveal that farmers were mostly middle aged ($\bar{x}$ = 49.46 years); had large households ($\bar{x}$ = 11.36); possessed fairly low-levels of formal education and had small farm sizes ($\bar{x}$ = 0.86 ha). The credit profile showed that the mean credit size of ₦13,295.50 received by the respondents was lower than their mean expenditure of ₦17,704.50 meaning that the loan was only 75.1% sufficient. In addition, the farmers recorded a mean farm output of ₦67, 340.50.

Correlation analysis revealed that farmers age (r = 0.27), education (r = 0.38) and total family size (r = 0.32) were found significant and positively related to credit size, while credit experience was not.

Regression analysis gave an F value of 68.638 with an R^2 of 0.715, which indicated that selected independent variables accounted for 71.5% of observed changes in credit size. Variables that made significant contributions to changes in credit size included farm experience, Extension agents' visit, adoption of innovations, farm size and farm output. With farm output as dependent variable, regression analysis gave an F value of 30.061 with an R^2 of 0.437. This indicated that selected variables accounted for 43.7% of the observed variations in farm output. Independent variables that made significant contributions to these include farm labour, operating expenses, credit size and Extention Agents' Visit.

Perception of credit by the farmers had a mean score of 86.5 varying from 47.0 to 100.0. This was against the expected minimum perception score of 22 with a

maximum of 110. Correlation between perception and credit was r = 0.394 which was significant at 0.01 level.

Based on the findings, it was inferred that the credit provided appeared insufficient to cover farmers capital needs. Provision of credit however, enhanced farmers level of production.

Farmers socio-economic characteristics such as age, education, farm experience, farm size and total family size positively influenced small-scale farmers ability to manage credit obtained by them. Also, farm characteristics such as adoption of innovations and Extension Agents' Visit improved the productive use of credit by the farmers.

Finally, the positive correlation of farmers' perception with credit use suggests that credit fulfills important functions in farmers resources use.

CERTIFICATION

This is to certify that this thesis was carried out by Mr. Olokuntoye, Rotimi Adelanke under my supervision.

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DEDICATION

This project work is dedicated to ALMIGHTY GOD for his abundant mercy, protection and guidance over my life and that of my family throughout my academic pursuit without which my achievement and ambition would have been a mirage.

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CHAPTER ONE

INTRODUCTION

1.1 The Food Production situation in Nigerian Economy

Agriculture remains one of the most important economic sectors of the Nigerian economy in terms of its contributions to the gross domestic product (GDP) and employment generation. Agriculture contributed 59.8% to GDP in 1960 – 65 (See Table 1). During the oil boom era (1970 – 80), this declined steadily to 22.4%. By 1981-85, its share rose slightly to 25% and further to 37.9% between 1986 – 90 and slightly down to 36.4% and 33.2% in the post oil-boom era of 1991-95 and 1999-2000 respectively. The earnings from agriculture to total exports within this period also declined steadily from 8.3% in 1971-75 to 1.0% in 1996 - 2000 (See Table 2). The rise in 1986 – 90 might have been due to the gains obtained from the macro-economic policies within the period with the introduction of Structural Adjustment Programme.

Furthermore, in response to the SAP policies, aggregate agricultural production improved from – 0.6% annual growth rate in 1970 – 1985 to 8.8% in 1986 – 1993. However, this declined to 3.6% in 1994 – 1999 (Ukeje 2000). One of the reason attributed to this erratic syndrome is the initial government over-focus on the petroleum sub-sector which actually hindered agricultural (Baker, 1989 and Olalokun et al, 1984).

A cursory look at the food sub-sector shows this dismal performance. The growth rate of food demand is estimated at 3.2% per annum while that of annual food production is about 1.5% (FAO, 1986) as indicated by Dittoh (1991). This implies that there is food deficit. In a survey carried out by CBN/NISER (1991), composite figures indicate that the rate of domestic food production declined by an average of 0.42% annually between 1960 and 1985.

Table 1: Agricultural Contribution To Gross Domestic Product : 1960 –2000

Year	Percentage share in Total (%)
1960 – 65	59.8
1966 – 70	52.2
1971 – 75	30.6
1976 – 80	22.4
1981 – 85	25
1986 – 90	37.9
1991 – 95	36.4
1999 – 2000	33.2

Source: (1) Central Bank of Nigeria Economic and Financial Review Vol. 31 No. 2 1993

(2) Computed from Central Bank of Nigeria: Annual Report and Statement of account various issues. 1997-2000

Table 2: Value Of Nigeria's Agricultural Export (N Million): 1971-2000

Year	Average Value of Agricultural Exports	Average Value of Total Exports	Agricultural Exports as % of Total Export
1971 – 75	260.8	3145.3	8.3
1976 – 80	408.7	9093.7	4.5
1981 – 85	276.6	9335.1	3.0
1986 – 90	1656.1	47666.3	3.5
1991 – 95	12856.1	71288.6	1.8
1996-2000	16001.1	1586159.3	1.0

Sources: (1) Central Bank of Nigeria Economic and Financial Review Vol. 31 No. 2 1993

(2) Computed from Nigerian Trade Summary Federal office of Statistics, Lagos 1995

(3) Review of Nigerian Economy Federal Office of Statistics 2000.

However there were slight increases in some staple food commodities in the 1990's as shown in Fig. 1. Table 3 also show that maize production increased from 2205 metric tonnes in 1990 to 5289 in 1995 and 6419 metric tonnes in 2000. While cassava production increased from 3675 metric tonnes in 1990 to 20299 metric tonnes in 1995 and 36750 in 2000. Yam production from 7813 metric tonnes in 1990 to 7406 in 1991 but has been on steady increase up till 2000 as 26421 metric tonnes of yam was produced that year.

Thus there is ample evidence pointing to the fact that current food situation would require efforts to sustain the gains made and greater improvement towards farming. For instance the effect of the increases in food supply is being negated due to increasing population growth rate above production level. Hence significant food deficits have been forecasted in developing countries generally (FAO, 1987). This posture have implications for food security. For instance Nigeria which was almost self-sufficient in food production in early 1960's became major food importer in the 1980's (Olayemi, 1989). The external dependence on food supply as reported by Idowu (1994) showed that Nigeria's food import bill increased from 46.08 million in 1965 to an all-time high of N3.746 billion in 1990. The figure stood at N103.49 billion in 1999 (FOS, 2000) and N113.63 billion in 2000 (CBN, 2000) which is ten folds of agricultural exports. This indicated a negative terms of trade for the agricultural sector. Ukeje (2000) showed that food import account for 15.8% of total imports in 1999 with an average annual growth rate of 12.9% in 1994 – 1999 period despite the Structural Adjustment Programme. This meant that food importation is significant in the total imports of the country.

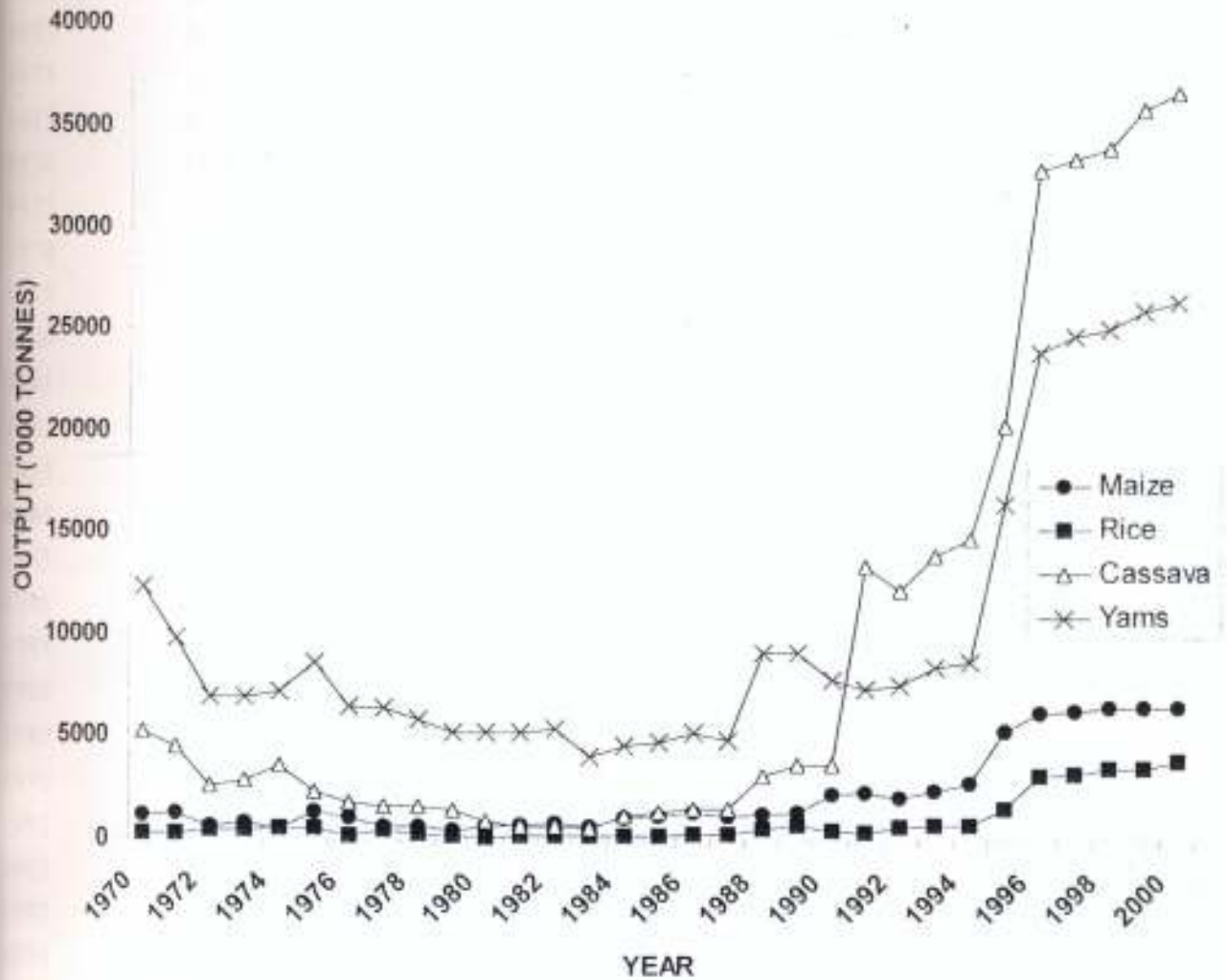

Fig.1: TREND IN SELECTED NIGERIA'S FOOD CROP PRODUCTION OUTPUT: 1970 - 2000 ('000 TONNES)

Sources: Computed from Central Bank of Nigeria Statistical Bulletin Vol. 3No.1, June 1992 and Federal Office of Statistics Annual Abstract of Statistics Various issues, Central Bank of Nigeria Annual Reports and Statement of Accounts December 2000

Trend in Selected Nigeria's Food Crop Production Output: 1970 – 2000

('000 tonnes)

Maize	Rice	Cassava	Yams
1143	230	5224	12303
1274	279	4516	9766
639	447	2573	6900
808	487	2912	6936
528	525	3582	7160
1332	504	2324	8620
1068	218	1786	6470
650	410	1656	6376
658	280	1620	5866
488	160	1446	5256
612	105	942	5248
720	158	620	5212
766	212	592	5385
594	145	513	4047
1058	157	1209	4600
1190	196	1378	4738
1336	283	1564	5209
1202	297	1486	4886
1277	529	3155	9132
1338	687	3727	9172
2205	461	3675	7813
2334	391	13381	7406
2075	624	12225	7513
2449	704	13937	8415
2816	743	14710	8709
5289	1514	20299	16432
6217	3122	32950	23928
6285	3230	33510	24713
6435	3486	34092	25102
6515	3522	35980	26007
6491	3841	36750	26421

(1) Central Bank of Nigeria Statistical Bulletin Vol. 3 No. 1 June 1992

(2) Federal Office of Statistics Annual Abstract of Statistics 1996.

(3) Central Bank of Nigeria Annual Report and Statement of Account December 2000.

Consequently, the change in scenario of Nigeria's agriculture coupled with the declining revenue from the petroleum industry had its toll on the quality of life of the populace. For instance in 1980, per capita income of Nigeria was estimated at $1000 (U.S. Dollars) but by 1993, the country has plunged long into misery and poverty with less than $200 (US Dollars) per capita income (UNDP,1994). While rural poverty has persisted and even worsened in the 1980's and beyond, development indicators now point to stagnation or rather decline in levels of food self-sufficiency and nutrition.

1.2 Problem Statement

Central to the development of the agricultural sector in Nigeria is the notable feature of small-scale farmers who apparently produce over 70% of the country's total agricultural output. The productivity levels of these farmers is however low, considering the decline in average per hectare farm yield in various crops (CBN/NISER 1991 and Olayide, 1982). In addition, small holder agriculture is considered strategic to achieve the objective of food self-sufficiency and security in Nigeria (Idachaba et al 1980).

In order to increase the output of the small-scale farmers, their myriad of problems such as unfavourable product prices, inadequate supply of capital resources, weak infrastructure support and so on must be tackled. One of the key measures that is critical to increased agricultural productivity is supplies of credit to small scale farmers (Ijere, 1981, Ewuola, 1985; Nwana, 1995 and Toluyemi, 1996).

In the agricultural sector, credit requirement is very high because the overall production of the country depends on a large number of individual farmers' the majority of whom are in marginal economic conditions. This probably explains the long history of involvement of the Nigerian governments in the provision of

agricultural credit as a policy action directed towards improving the production and productivity of small-scale farmers. This is exemplified in its various credit schemes and programmes such as Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB) and Agricultural Credit and Guarantee Scheme Fund (ACGS), as well as monetary credit policies in favour of agriculture. The inadequacies in credit supplies from the government sources has also lead to patronage of Thrift and Credit cooperative societies. This source is more favoured because of easier accessibility and less collateral requirement.

A serious constraint of the small-scale farmers is that the magnitudes of loans granted are inadequate for their needs. A situation that can neither be remedied by the more patronized informal credit sources. Hence the problem of increased diversion of loan to non-farm uses by farmers has been recorded. Argument has therefore arisen as to whether both consumption and production credit should be provided for farmers for their personal and production needs.

In view of this, there is the need to study credit effects on the small farm sector. Thus, the research problem is cast in such question as:

(i) Does adequacy of credit size influence level of output or not.

(ii) What is the farmers' perception of credit?

(iii) What are the implications of these on small-scale farmers loan policy in the country?

1.3 Objectives of the Study

The broad objective of this study was to investigate the effect of credit on the level of food production of small-scale farmers in Ondo State.

The specific objectives were to:

(i) Examine the socioeconomic characteristics of small-scale farmers credit users.

(ii) Assess the effect of credit size on the farmers output

(iii) Measure the farmers' perception of credit use.

(iv) Make policy recommendations with a view to improving loan administration to small-scale farmers.

1.4 Hypotheses of the Study

The hypotheses of the study were as follows:

(i) Size of available farm credit has no relationship with selected farmers' socioeconomic characteristics.

(ii) Farm credit has no effect on small-scale farmers' output.

1.5 Limitation of the Study

The study is limited to food crop farmers in Ondo State due to financial and time constraints.

The respondents also had the problem of recall abilities which stem largely from their inability to keep farm records. Hence approximations was made in some instances.

Also in some cases, the enumerators experienced some rebuff and intimidation from the respondents due to their prevailing attitude that they do not see how provision of the data would benefit them, and from lack of inadequate appreciation of their role as stakeholders in the effort to develop the Nigerian economy. This respondents apathy was however reduced by explaining the benefits of scientific researches to the overall welfare of the entire populace.

1.6 Significance of the Study

One of the central issues of development economic that governments and policy makers are focusing attention on is how to improve the socio-economic well-being of the people and thereby reduce deprivation and misery. This study will give further insight into credit delivery to one of the less-priviledge group of people (farmers) as a way of enhancing their farm production.

The research results obtained would also be valuable for researchers, policy makers and credit administrators. It would also provide current data in empirical results in credit administration.

CHAPTER TWO

LITERATURE REVIEW

2.1 Concept of Agricultural Credit

The word credit is derived from the Latin word "credo" which means I believe. Credit has been interpreted by Famoriyo and Igben (1978) to mean the belief of the lender in the ability and willingness of the borrower to fulfill his financial obligations. Various authors have defined credit "as the acquisition of, and control over funds at a cost, for a specified time period". An explicit definition of agricultural credit has been given by Ewuola (1985) as the present and temporary transfer of purchasing power (wealth, assets in form of goods, services and money) from a person or body who owns it to one who wants it, allowing him the skill to command another person's capital for agricultural purpose but with confidence in his willingness and ability to repay at a specified later date as stated in an agreement.

2.2 Sources of Credit

In Nigeria, agricultural credit is made available to farmers through a number of institutions in the organized credit market in addition to individuals operating in informal market.

According to Okorie (1988) and Toluyemi (1996) the two sources of credit available to farmers are broadly categorized into formal and informal sources. The informal sources otherwise called non-institutional sources include friends, relatives, private money lenders, rotating credit sources and merchant traders. Miller (1975) stated that the informal sector accounted for 26.9% by number of those using it. The study also revealed that 14.3% of the farmers used formal credit.

The formal sources or institutional credit on the other hand consist of public and private credit institutions such as commercial banks, government-owned agricultural credit corporations, co-operative societies, merchant banks and similar institutions.

In appraising these sources, the informal sources constitute an important source of credit to small holder farmer because of easy accessibility and minimal formalities in obtaining loans. However, loans given out from this source have prohibitive interest which range from 20 – 200% (Toluyemi 1996). The formal sources have not performed well either. Okorie (1988) stated that the overall performance of commercial banks in agricultural sector finance fell below the minimum target set by the Central Bank of Nigeria with an annual average of 7.1% in 1984 even with Agricultural Credit Guarantee Scheme.

Despite this, Famoriyo and Imoudu (1988) contend that even though an average Nigerian farmers still continues to rely on non-formal credit and are not enthusiastic about formal sources of loanable, formal institutional credit provides the most appropriate source of loanable fund inspite of cumbersome and delay procedures. This is because of the magnitude of credit required and the intricacies involved in credit administration and favourable interest rates.

2.3 Studies on Small holder agricultural lending in Nigeria and other developing countries of the world

The use of agricultural credit programmes in many developing countries has been seen as one of the major means of promoting agricultural development. It is conceived that small-scale farmers do not have sufficient fund to undertake the level of investment needed for rapid agricultural development. Hence a sound, efficient financial system is important to economic growth as a growing body of literature

demonstrates (Mckinon, 1973, World Bank, 1989, Bencivenga and Smith, 1991). Oludimu and Adeyemo (1984) were of the opinion that provision of farm credit is a key element in the modernization of agriculture.

Considering the fact that innovations requires extra capital, Bindlish and Evenson (1993) identified unavailability and inadequate credit as a major factor constraining adoption of production recommendation of the resource-poor small scale farmers in Kenya.

According to Atieno (1995), the lack of credit for small-scale farmers has been identified as denying farmers opportunity to expand production beyond their current level. This is because farming is capital intensive and farmers in Nigeria and elsewhere require enormous financial resources to hire labor beyond family source, purchase agro-chemical which are exorbitant and purchase non-conventional and high-yielding farm inputs such as improved varieties of seeds and breeds of livestock in order to increase their level of production. Hence, Orafidiya and Osuntogun (1987) posited that the major role of credit in peasant farming is the opening of greater opportunities for acquisition of much needed inputs.

Ogunfowora et al (1972) suggested the reasons why the small holders agriculture in particular require credit as follows.

(i) Many innovations is farming inevitably increase the capital requirement of farmers.

(ii) The bulk of the farmers produce at subsistence level and there is therefore little marketable surplus out of which savings for future investment can be made.

(iii) The seasonal nature of farm production and income generation create a need for short term and medium-term loans from financing production activities.

(iv) The supply of loans may strengthen the farmers position in the disposal of their farm produce instead of having the timing determined by urgent needs for cash.

Technological innovations in agriculture are accompanied by stochastic surges in capital needs and savings (Desai and Mellor, 1993: Bathrick 1981 and Ray 1985). In order to shift production functions upward, farmers must be able to purchase modern farm inputs such as high-yielding varieties of seeds, fertilizers and irrigation equipments. This should help alleviate food shortage.

As World Bank's president Robert Mc Namara stated in a conference.... "without rapid progress in small holder agriculture throughout the developing World, there is little hope either of achieving long term stable economic growth or of significantly reducing the levels of absolute poverty" (World Bank 1987). Agricultural credit was to play an important role in accomplishing these production objective of making it possible for once marginal farms to become viable and credit worthy enterprises.

Zeller (1999) observed that access to credit will increase the risk bearing capacity of farm households, thus allowing the use of improved technologies. In the same vein, Nwana (1995) stated that insufficient capital and lack of access to credit have been explicitly recognized as some of the critical factors influencing and limiting the growth of the small holder sub-sectors in LDC's particularly in adopting basic agricultural technologies. Hence in the concepts of modernization of agriculture, supply of production resources, profitability of production, marketing and credit become vital interacting variables and components for its actualization.

The supply of effective means of production could constitute a classic bottleneck in the level of productivity in small scale agricultural. In the statement of Igben (1988) "available data indicate that low level of production and productivity especially in crops appears to be the direct and immediate cause of food and industrial

raw material crisis in Nigeria". In order to ameliorate this situation, Aderinola (1989) and Atieno (1995) affirmed that credit is an effective means of bringing labor, land and management into productive use and intensifying the productivity resulting from credit use that act as the underlying motivation of many government programmes seeking to provide credit.

2.4 Problems of Agricultural Credit Lending

The use of credit for agricultural production has been rightly recognized by both government and donors alike as important and has been promoted through various programmes and project. The success however has been spotty and one can say in general that agricultural credit projects have not performed as planned (Alexander 1996). Hence a major issue now is wether improvement in formal financial structures and credit policies will contribute toward investments and growth.

Okorie (1988) explicitly categorized problems of smallholders agricultural credit as farm oriented, bank oriented and government oriented. Accordingly, the farm oriented problem include lack of suitable security for loans, illiteracy among farmers, risk averse, poor management of funds, small fragmented holding and risks and uncertainties surrounding agriculture. While the bank oriented problems include high administrative costs, inadequate rural branch network, inadequate staff to administer, monitor and supervise the loans. The government related problems include frequent inconsistent government policies such as import and export regulations on farm commodities that is banning and unbanning food and farm input, changes on interest rate, inadequate infrastructure facilities, such as marketing, transportation and inadequate research support and extension services. The farmers inability to fill bank forms, keep farm accounts and poor management of fund was inextricably linked to illiteracy and hence farmers divert loans to unintended use (Okorie 1988).

Famoriyo (1977) stated that the deterrent to the flow of commercial bank loans to smallholder farmers entails high administrative costs, difficulties of supervision and recovery of loans, lack of collateral security and high default rates.

According to Ewuola (1980) and Okwuosa (1976), peasant credit schemes via government and government agencies have not been too successful largely because of poor loan repayment by beneficiaries. The loan recovery rates have been low even with supervision and careful selection of beneficiaries. This is also linked with land title problem in developing countries.

Schrieder and Heidhues (1995) and Alexander (1996) also noted that formal loans have high borrower transaction costs in form of transportation, food gifts, accommodation and bribery. The resulting effect is that the small farmers were discouraged from seeking formal loans.

All of these are suggestive that formal loans are fraught with discerning problems that requires attention. In fact the multifarious need of farmers have lead to the proposition that both production and consumption credit should be made available to improve food production. Production credit enhances farmers productive and income capacity. On the other hand, consumptive credit is particularly effective in bridging temporary food shortages and other non-farm credit needs of the farmers.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Area of Study

The study was conducted in Ondo State, Nigeria. This area falls within the rainforest belt of the country with vast agricultural potentials. There is substantial production of tree crops, produce such as cocoa and oil palm. Cash crop and non-cash crops are also produced. The prominent food crops grown in this area included yams, cassava, and maize. While sweet potato, rice, plantain, beans and cocoyam are grown in some locatives in commercial quantities. Ondo State economy is primary agro based with agriculture accounting for the largest revenue base and provision of employment.

Climatically, the area exhibits two types of vegetation – namely forest and derived Savannah. This study was based on four main food crops grown in the area namely yams, cassava, rice and maize. The choice of the crop is based on their importance in the food basket and in the production pattern of small-scale farmers, which are essentially mixed cropping.

3.2 Method of Data Collection

Both primary and secondary sources of data were employed for the collection of data for the study. The instrument used for the primary data collection was standardized interview schedule. The information elicited from the respondents include household demographics, farm characteristics agricultural production, land tenure, labour pattern, credit profile, use of improved farm practices and perception to credit programme. The questionnaire was administered to the households who are involved in credit utilization.

The interview schedule was self administered with the assistance of trained enumerators who were diplomates of agricultural discipline. In each round, respondents were asked question such as the amount they borrowed for farming activities within the season and how it was expended. A triangulation survey was also conducted to cross - check facts by obtaining information from key informants such as prominent farmers, traditional leaders and officials of farmers societies.

In addition, data obtained from Federal Office of Statistics, Central Bank of Nigeria, previous research reports as well as other relevant publications constituted the sources of secondary data for the study.

3.3 Sampling Procedure

A multi-stage random sampling procedure was employed to select the sample. By simple randomization techniques, five local government areas were selected from the eighteen local government areas in Ondo State from which data was collected (see Figure 2). These are Akoko North East, Irele, Akure North, Odigbo and Ose Local Government Area respectively. Two communities were further selected from each local government area by the use of random sampling.

The sample frame consists of enlisted farmers in various farmers association and groups within the communities to allow for ease of questionnaire administration. The list of the farmers associations was collected through liaison with the Agricultural Extension Agent and community heads in the study area. Numbers were assigned to each farmer. By proportionate sampling, forty respondents were selected from each local government area with the use of table of random numbers. In all, information was sought from a total of two hundred respondents who were credit users.

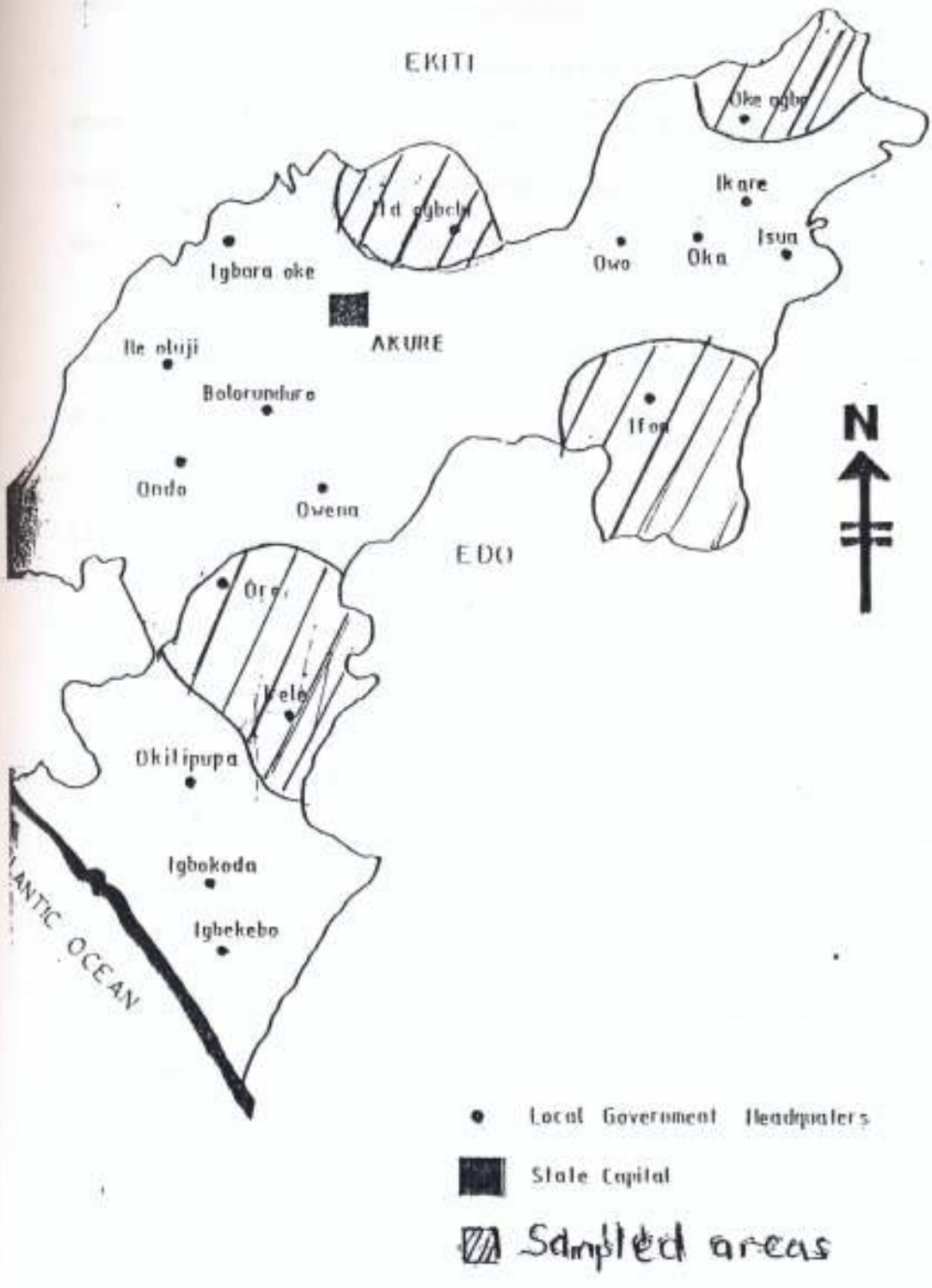

Fig 2: Mupef Ondo State showing Sampled area

3.4 Data Analytical Technique

Descriptive, inferential and predictive statistical treatments were employed in the analysis of data collected from the respondents.

The descriptive statistical treatment includes frequency distribution, means and line graph. This was applied to demographic variables such as age, educational status, farm experience and so on and non-demographic variables such as farm output and credit size. A further analysis of this was carried out with correlation.

While the inferential statistical treatment such as t-tests and f-test were used to evaluate the level of significance of the data in the hypotheses tested. Regression analysis constitute the predictive statistical tool for the data collected.

3.5 Measurement of Variables

The variables were measured as follows:

(i) Age – in years

(ii) Output – the gross value of total production for yam, maize, cassava and rice during the 1997 cropping season in kilogramme and their value in Naira. (for yam and cassava, an average value per heap multiplied by the total number of heaps while an average value per bag unshelled maize cob and undehusked rice were used respectively.

(iii) Land – the total farm size under cultivation in hectares and Heaps were converted to hectares using. Ewuola (1985) standard of 3000 Heaps = 1 acre and 7400 heaps = 1 hectare.

(iv) Labour – the number of mandays employed on the enterprises. Adult male equivalent was used for women and children labour (Women labour and children labour account for two-third and one third mandays respectively.

(v) Operating expenses - the value in Naira (₦) of fertilizer, seed, pesticides, farm tools and tractor hire services.

(vi) Extension visit – the number of times farmers were visited.

(vii) Credit size – the amount of loan received by the farmer in Naira (₦).

(viii) Perception – a five point likert type scale was used to measure perception of farmers to credit as developed by Ewuola (1985). The question were rated thus:

Strongly agreed	-	5
Agreed	-	4
Undecided	-	3
Disagreed	-	2
Strongly disagreed	-	1

In each round, respondents opinion was sought to find out their attitude to credit use. In order to achieve this, respondents were asked to rate their level of agreement or disagreement with twenty two attitude questions asked on credit use. This include wether credit is meant for ownership of non-farm assets, financing social activities, purchase of farm assets and so on. The scoring on negative statements were reversed, thus strongly agreed became 1 point and agreed became 2 points in that manner. While positive statements retained the normal scoring allotted. The points were cumulated to obtain individual respondents perception score on the twenty-two variable-items.

Product moment correlation (r) was employed in analysing the data obtained. It was carried out to investigate the possibility of the existence of a linear relationship between credit size and farmers perception of credit use.

3.6 Model Specification

The output and credit size model were specified for the study model 1 – output model. The production function approach was used to estimate the production behaviour of the farmers to credit use.

The general form of the function is specified as follows

$$Q = A + B_i X_i + U \quad \text{.....i}$$

Where Q = total output

A = constant term of the regression

B_i = coefficient of X_i input

U = error term

In the explicit from eq(i) becomes

$$Q = b_o + b_1X_1 + b_2 X_2 + b_3X_3 + b_4 X_4 + b_5 X_5 \quad \text{.....ii}$$

where Q = Gross value of farm output

X_1 = Total farm size

X_2 = Total Farm Labour

X_3 = Farm operating expenses

X_4 = Loan value (credit size) received during the period

X_5 = Extension Agent visit

b_1, b_2 .....b_5 are coefficients to be estimated

Model 2 – Credit size model

The credit size model was specified as follows:

$$C_z = a_o + a_1 X_1 + a_2 X_2 + a_2 X_2 + a_3 X_3 + a_4 X_4 + a_5 X_5 + a_6 X_6 + 9_7X_7$$

Where

C_z = Credit size

X_1 = Age of Respondents

X_2 = Farm experience

X_3 = Extension agents visit

X_4 = Adoption of innovations

X_5 = Farm size

X_6 = Household size

X_7 = Farm output

a_1 , a_2 ..... a_7 are coefficients to be estimated.

The models were tried in linear, semi-log and double-log forms to find out the functions that gives most plausible result to the analysis of the data.

The a priori expectation of all the regressors with the exception of age are positive signs, because all the independent variables are expected to positively influences each of their respective dependent variables.

The reliability and adequacy of the regression results was tested at various levels. The first stage relates to the theoretical postulates about the signs of the parameters. The second stage involve the use of R square and F value (Koutsoyannis, 1977) to asses the reliability of the result.

CHAPTER FOUR

FINDINGS AND DISCUSSION

This chapter presents the analysis, interpretation and discussion of findings of the field data collected in line with the stated objectives. The chapter is divided into three sections as follows:

Section 4.1 contains the socio economic characteristics and credit profile of the respondents. The socio economic characteristic include Age, Marital status, Household size, Social status, Education, farming experience, Farm size, Method of farm acquisition, Available farm land area, food crops grown, credit experience and sources of labour. While the credit profile and farm input-output data of the respondents include Credit size, farm expenditure, farm output, constraints to credit use and perception to credit use. These are presented using frequency percentages in Tables 4 to 20.

In section 4.2, selected socio economic characteristics of the farmers were correlated with credit size in order to find out the existence of linear relationship between each of the variables. The variables include Age, Marital status, Education, Total family size and credit experience. This is presented in Table 21.

Section 4.3 contains the results of the Regression analysis carried out on the functional models specified for the study. The analysis was carried out to examine the influence of selected independent variables on credit size and farm output as different dependent variables. The results of the analysis are presented in Tables 22 and 23.

4.1 Socio-economic characteristics of Respondents

In Nigeria, socioeconomic characteristics are important in securing and using loan. These characteristics are discussed as follows:

(i) Age of Respondents

From the survey, the age of the respondents has a mean of 49.46 years with a range of 25 to 75 years (Table 4). As shown in Table 4, a total of 32.0% of the respondents were within the modal age range of 41 to 50 years. 43.5% of the farmers were 51 years of age and above and can be categorized as the older farmers. The younger farmers of 40 years and below constitute 24.5%.

The implication of these is that the majority of the farmers were within their prime ages of labor productivity and might likely utilize the credit obtained productively. Also they are expected to be very active and desirous for productivity-oriented opportunities. On the other hand, the involvement of the youth in farming was found to be precariously low. When this is compared with the aging farming population, it calls for the need for emergence of a new crop of dynamic and more active farmers who are equipped with proven methods of farming. In this manner, the problem of food shortages will be averted.

Table 4: Age of Respondents

Age (Years)	Frequency	Percentage	Cumulative percentage
≤ 30	6	3.0	3.0
31 – 35	12	6.00	9.0
36 – 40	31	15.5	24.5
41 – 45	32	16.0	40.5
46 – 50	32	16.0	56.5
51 – 55	22	11.0	67.5
56 – 60	31	15.5	83.0
61 – 65	22	11.0	94.0
66 – 70	9	4.5	98.5
Above 70	3	1.5	100.0
Total	200	100.0	

Sources: Field Survey.

(ii) Marital Status

The distribution of respondents according to marital status shows that 98.5% of the farmers were married (Table 5). Those who are single and divorced accounted for 1.0% and 0.5% respectively. This shows that majority of the respondents were settled family people and have family responsibility. It also suggests that they would be desirous of opportunities that could be applied towards increasing their income earning capacity and improving their standard of living.

Table 5: Marital Status of Respondents

Marital Status	Frequency	Percentage
Single	2	1.0
Married	197	98.5
Divorced	1	0.5
Total	200	100.0

Source: Field survey.

(iii) Household Size

The total household sizes of the respondents comprises of the respondents, their wife/wives children and their dependants. This is agreement with the view of Oluwasanmi (1966) who stated that a household consist of a category of people who feed from the same pot. As shown in Table 6, the findings revealed that the total household sizes ranged from 1 to 25 with a mean of 11.36 members. This meant that the respondents maintained large member. 34.5% of the respondents had household size of 6 to 10 people which can be categorized as the medium- sized households. The larger sized households of 11 persons and above were in the majority and accounted for 37.5% of the distribution. While the small-sized households of 5 persons and less accounted for 28.0%.

The preponderance of large household size respondents can be attributed to the culture of marrying two or more wives and inadequate use of family planning method among rural people. In African setting this might also imply provision of abundant labour for farm work given their willingness to apply their energies to farm work. Children and women labor constitute significant source of labor for small scale farming in Nigeria.

Table 6: Household size of Respondents

Household size	Frequency	Percentage	Cumulative percentage
1 – 5	56	28.0	28.0
6 – 10	69	34.5	62.5
11 – 15	66	33.0	95.5
16 - 20	6	3.0	98.5
Above 20	3	1.50	100.0
Total	200	100.0	

Source: Field Survey.

(iv) Social Status

The distribution of the respondents according to social status shows that 43.0% of the farmers interviewed were ordinary citizen (Table 7). 32.0% were household heads, 13.0% held chieftaincy titles, 11.0% were government workers while community heads were 1.0%. This implies that majority of the respondents (57.0%) had some form of social responsibilities and may influence their quest for credit to maintain their status quo.

The findings also indicate that various social classes of people in the society benefited from various credit programmes for agricultural production. It can thus be deduced that farming is capital demanding which most farmers lack to homes investment opportunities.

Table 7: Social Status of Respondents

Social Status	Frequency	Percentage
Ordinary citizen	86	43.0
Household head	64	32.0
Traditional/Religion Chief	26	13.0
Civil/Public Servant	22	11.0
Oba/Community Head	2	1.0
Total	200	100.0

Source: Field Survey.

(v) Education

Education is an important factor in the recognition and utilization of investment opportunities. Findings on Table 8 show that 22.5% of the respondents had no formal education, 9% attended adult literacy classes, 31.0% and 23.5% of the respondents had primary and secondary school education (both completed and uncompleted) respectively. While those respondents who attended tertiary institutions which include Colleges of Education, College of Agriculture, Polytechnics and Universities totalled 14.0%. A similar trend was reported by Oni (1999) in his survey of small holder farmers using credit.

The high preponderance of respondents with formal education might be associated with the realization of the advantages of enhanced production through provision of credit by more educated persons. Majority of the farmers most probably see farming as a means of livelihood rather than a way of life. The educated farmers are the type of farmers that see the gains in adoption of innovations in order to improve their productivity.

Table 8: Distribution of Respondents According to their highest level of Education

Educational level	Frequency	Percentage	Cumulative percentage
No formal education	45	22.5	22.5
Adult literacy	18	9.0	31.5
Incomplete Primary School	21	10.5	42.0
Complete Primary school	41	20.5	62.5
Incomplete Secondary School	26	13.0	75.5
Complete Secondary School	21	10.5	86.0
Tertiary School	28	14.0	100.0
Total	200	100.0	

Source: Field survey.

(vi) Farming Experience

The farming experience of a farmer can be a useful guide in the use of inputs and in taking farm management decisions. Table 9 shows the distribution of respondents according to years of farming experience. Data obtained from the survey shows that the average farm experience of the farmers was 20.14 years with a range of 3 to 50 years. Farmers who had less than 11 years of experience were 24.5%. The majority of the respondents (a total of 60.5%) had between 11 and 30 years of experience. While 15.0% of the respondents had between 31 and 50 years of experience. This means that the farmers were well experienced in farming business

This finding imply that the farmers might be able to make right decisions on the use of productive inputs adequately. Also the farmers resort to credit use might be attributed to long-time recognition of it as a means of farm expansion to meet family obligations.

Table 9: Farm Experience of Respondents

Experience (years	Frequency	Percentage	Cumulative percentage
≤ 5	15	7.5	7.5
6 – 10	34	17.0	24.5
11 – 15	43	21.5	46.0
16 – 20	28	14.0	60.0
21 – 25	26	13.0	73.0
26 – 30	24	12.0	85.0
31 – 35	13	6.5	91.5
36 – 40	11	5.5	97.0
41 – 45	3	1.5	98.5
46 – 50	3	1.5	100.0
Total	200	100.0	

Source: Field survey.

(vii) Farm Size

Another important general characteristics in farm socio-economic studies is farm size.

Table 10 shows that the respondents' farm size varied from 0.01ha to 2.5ha. Most of the farmers (37.5%) had 0.5 ha or less of farmland. Farm sizes of 0.51 – 1.0 and 1.01 – 1.5ha accounted for 31.0% and 23.5% respectively. A total of 8.5% of the farmers had between 1.51 and 2.5ha of farmland. The mean farm size of the respondents was 0.86ha with a standard deviation of 0.648. The distribution shows that there were low farm size cultivated by the farmers in terms of actual areas cropped. This might be attributed to the constraint posed by limited available capital within the reach of farmers that can be used for farm production purpose.

The findings from the study is also in agreement with Okorji (1999) who found that farmers cultivated small farm size with a mean of 0.88ha.

Table 10: Farm Size of Respondents

Farm size (hectare)	Frequency	Percentage	Cumulative percentage
≤ 0.5	74	37.0	37.0
0.51 – 1.00	62	31.0	68.0
1.01 – 1.50	47	23.5	915
1.51 – 2.00	9	4.5	96.0
2.01 – 2.50	8	4.0	100.0
Total	200	100.0	

Source : Field survey.

(viii) Method of Acquisition of Farmland

The prevalent method of farmland acquisition in the study area was by inheritance (61.0%). See Table 11. This was followed by Gift and Leasehold to farmers which accounted for 15.0% each. The respondents who acquired their farmland through purchase were only 4.5%. There were also farmers who obtained their farmlands from a combination of two sources. These were also few.

The implication of ownership of land by inheritance is that land obtained may not economically sufficient to meet the family needs of the farmers. In addition since such land belongs to the family or community, there may be little or no impetus for high level investment on such lands.

However farmers who operates on such lands are less risk-prone to communal feuds and clashes which could have otherwise mar production targets.

Table 11: Acquisition of Farmland by Respondents

Method of Acquisition	Frequency	Percentage
Inheritance	122	61.0
Purchase	9	4.5
Gift	30	15.0
Leasehold	30	15.0
Communal	3	1.5
Inheritance & Leasehold	3	1.5
Inheritance & Purchase	2	1.0
Purchase & Leasehold	1	0.5
Total	200	100.0

Source: Field Survey.

(ix) Available Land Area

Size of available farmland is a determining factor for expansion with credit availability. The survey shows that size of available farm land ranged from 0.4 to 15ha with a mean size of 2.09ha. (Table 12). Farmers with available land area of 1.0ha or less were in the majority (75.0%). Respondents with 1.1 – 5.0ha were (20.0%), while farmers having larger land sizes of 5.1ha and above were only 5.0%. When compared with the actual area cropped the implication of this is that farmers have spare land for expansion purpose on which crops could be rotated to maintain the soil fertility status of the land.

This suggest that farmland supply is yet not a major constraint to increased production in the study area. Thus it agrees with the view of Okorji (1999) that farmers land holding may be large but the proportion cultivated in a particular season may be relatively small. This situation is often aggravated by the fact that the small holder farmers do not obtain the required credit facilities for increased agricultural production, (Osuntogun and Oludimu (1982)

Table 12: Available Land Area of Respondents

Available land (hectare)	Frequency	Percentage	Cumulative percentage
≤ 1.0	150	75.0	75.0
1.1 – 5.0	40	20.0	95.0
5.1 – 10.0	6	3.0	98.0
10.01 – 150	4	2.0	100.0
Total	200	100.0	

Source : Field survey.

(xi) Food Crops grown by Respondents

The finding reveals that farmers in the study area cultivates a variety of food crops. As would be expected the results in Table 13 shows that the most widely grown food crops included Yam (100.0%), cassava (95.0%) and Maize (70.0%). In terms of ranking, this was followed by vegetables, plantain/banana and cocoyam. While the least cultivated food crops include rice (8%), sweet potatoes (4.0%) and beans (3.0%).

Oral interview with the farmers also reveals that the decision to cultivate the crops is influence by admixture of purposes such as household food consumption, income and traditional ceremonies. Yams for instance is an age long traditional crop used for social ceremonies.

The findings suggest that farmers are also desirous of credit to produce food for their personal family consumption. The cultivation of a variety of food crops could also in itself be an insurance against farm risks and uncertainties.

Table 13: Ranking of food crops grown by the Respondents

Food crops	Frequency	Percentage	Rank
Maize	140	70.0	3rd
Cassava	190	95.0	2nd
Yam	200	100.0	1st
Rice	16	8.0	7th
Cocoyam	76	38.0	6th
Beans	6	3.0	9th
Plaintain/Banana	90	45.0	5th
Vegetables	95	47.0	4th
Sweet potatoes	8	4.0	8th

Source: Field Survey.

(xi) Credit Size

The magnitude of credit granted to farmers enhance their financial position to apply their physical and mental abilities to production.

Table 14 shows that farmers utilized varied amounts of loan during the 1999/2000 planting season. Findings revealed that majority of the respondents (39.0%) received loans of between ₦5001.00 and ₦10,000.00 each. The farmer who received higher loan size of ₦15000.00 and above totaled 25.5% while those who received the least loan (5,000 or less) were 9.5%. The data obtained shows that farmers had limited access to substantial loan size.

From the oral interview with farmers, it was gathered that fear of risk involved in production affects the borrowing decisions of the farmers to request for huge guarantor more than personal amounts of loan. Besides they claimed not to have the collaterals required for huge loan. The loans are mostly unsecured with tangible properties. Generally these kind of small loans are more favoured by former sources because of the fear of how loan recovery rates among small scale farmers.

Table 14: Size of credit of Respondents

Amount (₦)	Frequency	Percentage	Cumulative percentage
≤ 5000	19	9.5	9.5
5001 – 10000	78	39.0	48.5
10001 – 15000	52	26.0	74.5
15001 – 20000	39	19.5	94.0
20001 – 25000	5	2.5	96.5
25001 – 30000	5	2.5	99.0
30001 – 35000	2	1.0	100.0
Total	200	100.0	

Source: Field Survey.

(xii) Credit Experience

The experience of using credit may affect borrowers ability in the productive use of credit facility and hence repayment ability. The data revealed that credit experience of the farmers range from 1 to 22 years with a mean of 6.86 years Table 15 shows that 43.5% of the respondents had between 5.0 and 9.99 years of credit experience 31% of them had less than 5.0 years of experience, while the more experienced credit uses who had 10 years and above constituted 25.5%.

Generally the farmers can be said to be of fairly reasonable length of experience in credit utilization. The implication of the findings is that the farmers have been benefiting from loans for long and are likely to use the credit obtained judiciously.

Table 15: Credit Experience of Respondents

Experience (in years)	Frequency	Percentage	Cumulative percentage
Less than 5.0	62	31.0	31.0
5.0 – 9.99	87	43.5	74.5
10.0 – 14.99	36	18.0	92.5
15.0 – 19.99	11	5.5	98.0
20 and above	4	2.0	100.0
Total	200	100.0	

Source: Field Survey.

(xiii) Sources of Labour

Availability of Labour is a very important factor as a determinant of the output of small-scale farmers. Table 16 shows that farmers used various types of labor singly and in combinations too. Family labor and Hired Labor constitute the major sources of labor used by 46.5% of the respondents. This constitute the modal class among

farm credit users in the study area. This was followed by Self and Hired Labor (29.5%). Farmers who used self-labour only were least (1.0%). The use of rotational labor was not important in the study area. farmers who used hired labor stated that they are mostly engaged during peak seasonal demand periods of activities such as bush clearing and weeding.

The findings of the study imply that the farmers rely on combinations of various sources of labor. This should act as a guarantee against total failure where a particular source is insufficient.

Table 16: Source of Farm Labor by Respondents

Sources	Frequency	Cumulative percentage
Self labor	2	1.0
Family labor	4	2.0
Hired labor	17	8.5
Rotational labor	0	0
Yearly labor	4	2.0
Self & family	21	10.5
Self & Hired labor	59	29.5
Family and Hired labor	93	46.5
Total	200	100.0

Source: Field Survey.

(xiv) Farm Output

The farmers level of output considerably shows the results of application of funds to the enterprise. As shown in Table 17, the farm output ranged from ₦8,400.00 to ₦78,000.00 with a mean of ₦67,340.50. 39% of the respondents had farm output of

₦50, 000.00 or less. The richer farmers whose farm earnings were above ₦50, 000.00 were in the majority and constituted 61%.

The mean farm output of ₦67,340.50 is comparatively higher than the mean expenditure of ₦17,704.50 (See Table 18). This indicate that farmers have used their finances judiciously. Also the income derived might improve their level of living.

Table 17: Farm Output

Range (₦)	Frequency	Percentage	Cumulative percentage
≤ 10000	2	1.0	1
10001 – 20000	9	4.5	5.5
20001 – 30000	13	6.5	12.0
30001 – 40000	27	13.5	25.0
40001 – 50000	27	13.5	39.0
50001 – 60000	38	19.0	58.0
60001 – 70000	28	14.0	72,0
Above 70000	56	28.0	100.0

Source: Field Survey.

(xv) Total Expenditure

The data contained in Table 18 shows that the total expenditure of the farmers ranged from ₦20,000.00 to ₦43,000.00 with a mean of ₦17,704.80. The majority of the respondents (42.0%) incurred expenses of between ₦10001 and ₦2000 .Those of them who incurred higher expenses of ₦20001 and above were 36.5%. While 31.5% of the respondents spent ₦10000.00 and less.

When compared with Table 14, the expenditure pattern of the farmers imply that they spent more than the credit obtained. This suggest that owned sources of finance might have been utilized in addition to borrowed sources.

Table 18: Total Expenditure

Range (N)	Frequency	Percentage	Cumulative percentage
≤10000	43	21.5	21.5
10001 – 20000	84	42.0	63.5
20001 – 30000	57	28.5	92.0
30001 – 40000	15	7.5	99.5
Above 40000	1	0.5	100.0
Total	200	100.00	

Source : Field Survey.

(xv) Constraints to Credit Use

As shown in Table 19, the farmers have various constraints in credit acquisition and utilization. The majority of the respondents (78.0%) complained of inadequate loan to finance their farm enterprise. This was followed by untimely disbursement (47.5%). While bureaucratic processing of loan and high interest rate accounted for 34.5% and 27.5% respectively. The inability of the farmers to provide collateral accounted for the least (22.5%).

This finding imply that small-scale farmers have limited access to credit due to the difficulties experienced by them in procuring loan. This situation may pose limitations to them in increasing their productivity and efficiency.

Table 19: Constraints to Credit Use

Constraints	Absolute frequency*	Relative frequency
High interest rate	55	27.5
Bureaucracy	69	34.5
Collateral inability	45	22.5
Inadequate loan	156	78.0
Untimely disbursement	95	47.5

Source: Field Survey.

(xvii) Perception to Credit Use

The study measured the perception status of the food crop farmers with a view to finding its relationship with credit utilization. Data contained in Table 20 shows that majority of the respondents (63.0%) had a high perception score of 86.0 to 110. 35.5% of them had average perception score of 66 to 85, while only 1.5% had a low perception score of 47 to 65. It was found out that respondents minimum score was 47.0 and maximum score was 100.0 with 110 as the total score attainable.

Also, the mean respondents score of 86.5 was higher than the expected mean of 66.0. This indicates that the respondents had a good perception to credit. Hence they are likely to utilize loans granted them judiciously.

For curiosity sake, pearson correlation was used to find out the relationship between credit size and farmer perception score of credit. The r value of 0.394.

Table 20: Respondent Distribution of their perception score of credit

Category	Score	Frequency	Percentage
Low	47 – 65	3	1.5
Average	66 – 85	71	35.5
High	86 – 110	126	63.0
Total		200	100.0

was obtained which is positive and significant at 0.01 level (1%). This means that the higher the farmers perception the better their disposition credit size utilized.

4.2 Association of Credit size with farmers' socio-economic characteristics.

Table 21 shows the correlation matrix of credit size with selected farmers' socio-economic characteristics.

Table 21: **Correlation Matrix of credit size with selected farmers' socio-economics characteristics**

	V_1	V_3	V_4	V_5	V_9	V_{21}	V_{24}
V_1	1.00						
V_3	0.19*	1.00					
V_4	0.30**	0.04	1.00				
V_5	-0.17*	-0.08	0.34*	1.00			
V_9	0.59**	0.12	0.10	0.21*	1.00		
V_{21}	0.27**	0.04	0.14	0.38**	0.32**	1.00	
V_{24}	0.55**	0.08	0.10	0.47**	0.47**	0.16	1.00

** = significant at 0.001 level

* = significant at 0.01 level

where

V_1 = Age

V_3 = Marital Status

V_4 = Social Status

V_5 = Education

V_9 = Total family size

V_{24} = Credit experience

V_{21} = Size of credit

Age: Farmer's age in correlation with size of available credit gives a value of r = 0.27 which is positive and significant at the 0.01 level (0.1%). This means that there is a positive correlation between age and credit size. It means that the higher the age, the more the available credit size. The older farmers are likely to utilize credit opportunities judiciously as they would not want to be embarrassed by their creditors.

Marital Status: The marital status of the farmers in correlation with size of available credit size gives a value of r = 0.04 which is not significant. It means that marital status does not influence credit size.

Social Status: The social status of the farmers in correlation with size of available credit gives a value of r = 0.14 which is not significant. It means that credit size is not influenced by the farmers social status.

Education: Educational attainment of respondents in correlation with size of available credit gives a value of r = 0.38 which is positive and significant at 0.001 level (0.01%). This means that there is a strong positive correlation between education and credit size. It means that the more educated farmers had more credit size.

Total family size: Farmers total family size in correlation with size of available credit size gives a value of r = 0.32 which is positive and significant at 0.001 level (0.01%). This means that there is a strong positive correlation between total family size and size of available credit. It means that the higher the family size, the more the available credit size. The respondents with a higher family size are likely to acquire more credit for expansion of the farm to feed the family members.

Credit experience: Credit experience in correlation with size of available credit gives a value of r = 0.16 which is not significant. It means that the years of experience in the use of credit does not have influence on the available credit size.

4.3 Regression Analysis

The result of the regression analysis for the postulated credit size function is presented in Table 22. Based on the correct signing of the explanatory variables, significance of regression co-efficients the value of R^2 and Least Standard Error, the Cobb Douglas functional form was selected as the best fit for the model. From Table 22, it could be deduced that the explanatory power of 71% of the variations in the credit size used by the food crop farmers is explained by the regression. Thus the regression has a good fit implying that the most explanatory variables are included in the model. Also, the F value of 68.638 was significant at 95% level of confidence. Thus it indicate a strong influence of the selected seven variables on the credit size utilized.

In order to determine the significance of the independent variables on the credit size obtained t value were computed from the corresponding regression coefficient and standard error. The findings from this are discussed separately for each variable.

Table 22: Estimated Regression coefficients for credit size function

Variable code	Variable name	Parameter estimate (Regression coefficient)	Standard error (SE)	T value
A	Constant	7.311		
X_1	Age of Respondents	-0.094	0.130	0.723
X_2	Farm experience	0.178	0.041	4.341*
X_3	Extension Agent Visit	0.379	0.087	4.356*
X_4	Adoption of innovation	0.192	0.076	2.526*
X_5	Farm size	0.162	0.026	6.231*
X_6	Household size	0.094	0.060	1.567
X_7	Farm output	0.168	0.043	3.907*

Multiple R = 0.845

R^2 = 0.715

R^2 = 0.704

SE = 0.314

F = 68.638*

* = Significant at 5% level

Age (X_1): The coefficient of age is not statistically significant implying that age is not an important explanatory variable that influence variations in credit size. Also it was negatively related to credit size and thus consistent with a priori expectations. This means that as the age of farmers increase, the less the credit size. The implies that

farmers reliance on credit diminishes with age increases. This is not unexpected as the fear of risk taking abounds with the older people.

Farm experience (X_2): The coefficient of farm experience is statistically significant and positively related to credit size thus consistent and positively related with the a priori expectation. This implies that as the farmers acquire more years of experience the larger the credit size utilized. This is because there is a tendency for him to be more efficient in the use of farm management techniques and thus generating more income.

Adoption of innovation (X_4): The positive sign of X_4 indicate that as the farmer adopts more innovations, the size of credit utilized increases. An increase in the number of modern farm inputs used increases total farm cost. Hence more loans had to be sought to meet production needs. The same analogy goes for **Extension Agents Visit (X_3)** The regular the contact with the extension agency, the more the credit size utilized. This is because farmers who are in contact with extension agency are likely to be more informed on where and how to obtain credit. Also, their managerial ability of their farms are likely to be better than if not exposed to such.

Farm size (X_5): The coefficient of farm size is also significant and positively related to credit size. This implies that farm size is an important variable explaining variations in the credit size obtained. Its direct relationship with the amount of credit utilized implies that the quantity of loans used is influenced by any change in farm size. The implication is that as the farmer increased their farm size and thus spending more so the credit used increased in size.

Household size (X_6): The positive sign of household size suggests that as it increases, the larger the credit size. Although it is not significant with credit it means that with a

large number of dependants, all this being equal the marginal propensity to consume increases as more unproductive mouths would have to be fed.

Farm output (X_7): The farm output coefficient of the available credit size was a significant variable. Its direct relationship with the volume of credit utilized implied that farmers utilization of loan increase as their farm output increases. This is because the farmers do not have enough owned income for farm operations thus necessitating borrowed fund to cover operating expenses.

The second regression model fitted is an output function designed to examine the variable which influence the variation in total farm output of the respondents. The results of the hypothesized model is presented in Table 23. Out of all the functional form tried, the Cobb-Douglas form was chosen as the lead equation for further analysis and interpretation. From Table 23, it could be deduced that 44% of the variability in farm output could be explained by the explanatory variables included in the model. The explanation of each of the variable is as follows:

Farm size (X_1): The farm size coefficient of the output function was a negative variable and insignificant. The negative value shows an inverse relationship with output. Although, all things being equal, the larger the farm size, the more the farm output. The implication of the findings is that an increase in farm output does not necessarily result from increased farm size. Hence, it is not unlikely that increased output is obtained from leased land holdings and shared tenancy. Also with exposure and use of innovations, which necessitate increased expenses, lesser farm size might be cropped.

Farm Labor (X_2): The coefficient of farm labor is a significant positive variable and hence consistent with a priori expectations. It implies that as more fund is expended on labour so does it increase the farm output. This is usually case with labor intensive projects which is a characteristic of small-scale farms.

Operating expenses (X_3): Operating expenses has a positive coefficient with the output function. Also it is a significant variable which means that it contributes significantly to the variation in farm output. Thus, as the operating expenses increased, the more the output.

Credit size (X_4): The coefficient of credit size was a significant variable. Its positive value indicates that the more the credit size the more the farm output. This means that credit gives room for increased use of inputs and modern innovations thus resulting in increased farm output. This is in agreement with the findings of Ewuola (1996) who found out that farmers net income increased with credit use.

Extension Visit (X_5): The positive sign of extension visit coefficient indicates that contact with the extension agency increases farm output. This might be expected because their chances of utilizing better management practices on their farms increases with more contact with the extension agents.

Table 23: Estimated Regression coefficients for farm output function

Variable code	Variable name	Parameter (Regression coefficient)	Standard error (SE)	T value
A	Constant	18166.6		
X_1	Farm size	-249.701	245.74	-1.016
X_2	Farm labour	0.772	0.23	3.404*
X_3	Operating expenses	0.831	0.19	4.187*
X_4	Credit size	1.033	0.22	4.806*
X_5	Extension visit	922.887	3236.28	0.776

Multiple R = 0.661

R^2 = 0.437

$\bar{R}^2$ = 0.422

Standard error = 15488.22

F = 30.061*

* Significant at 5% level

CHAPTER FIVE

CONCLUSION, RECOMMENDATIONS AND SUMMARY

5.1 Conclusion

This research found out that an understanding of farmers' socioeconomic characteristics that influences credit utilization and how it interacts and serves farm households can help in better management of credit programmes targeted at the poor.

In particular, it was found out that some farmers' socioeconomic variables positively influence farm credit utilization. Of the selected independent variables; Age, Education, Farm experience, Farm size and Household size were found to be significant. Thus they have strong influence on farmers' ability to utilize higher amounts of credit.

In addition to this, other farm characteristics such as adoption of innovations and Extension Agents visit positively influence farmers quest for loan. This is because farmers often require extra capital to harness opportunities provided by Extension Agents in acquisition of improved methods of farming. Also, farmers' managerial abilities to utilize credit productively rather than for consumption purposes is enhanced when they are properly educated on how such fund facility are better managed.

The loan users were mostly matured people from different social classes and had exposure to forms of formal education. This probably made them to realize the advantages of using credit. This include among other things economic empowerment for adoption of innovations, acquisition of needed farm equipment and cultivation of larger tracts of land. The farmers adopted more innovations as a result of the loan they obtained.

The involvement of youth in farming was precariously low and thus replacement of the aging farm population by the younger ones to avert food shortages might be a problem.

Finally, the amount of loan provided was found to be small amounts that are unsecured. The loan was secured by personal guarantees. This amount of credit provided was insufficient to meet farmers production needs. The farmers restricted themselves to small loans because of their inability to provide collaterals for huge loans. This shows that farmers who request for small loans are likely favoured by farm credits lenders.

5.2 Recommendations

Based on the findings of this study, it is recommended that:

(i) Loan administrators should consider the provision of adequate amount of loan to farmers to facilitate technological improvement among them.

(ii) Timely disbursement of credit by loan agencies will enhance profitable use of loans. This is against the notable feature of loan misuse and diversion due to untimely disbursement of loan to farmers.

(iii) Farmers should be provided with education on loan utilization in order to improve accessibility and profitability of credit use. Education will also play important roles in loan recovery performance of farmers. This will discourage loan misuse by them.

(iv) Farmers need be encouraged to join saving and credit self help groups to facilitate easier access to credit. A constraint of fund has been the problem posed by some formal sources as a deterrent to flow of funds to agricultural sector.

(v) More research should be conducted in the area of micro-credit schemes as a poverty alleviation measure to farmers.

5.3 Summary

The main objective of this study is to investigate the effect of credit size on farmers' production. The result obtained from the study could be summarized as follows:

(i) The mean credit size received by respondents was N13295.50. While their average farm expenditure was N17,704.50. This indicate that the amount of credit utilized by the farmers is inadequate to meet their needs. This size of credit of respondents ranged from the smallest amount of ₦2,500.00 to ₦33.000.00. This was corroborated by the fact that 78.0% of the respondents complained of inadequate loan as a constraint in their farm operations.

(ii) The loan users are from all social classes of the society and have fairly reseasonable length of experience ($\bar{x}$ = 6.86 years) in credit utilization.

(iii) The mean farm output of N67, 340.50 of the farmers was comparatively higher than the mean expenditure of N17, 704.50. A total of 94.5% of the farmers had farm earnings of above N20000.00. Thus indicating that farmers judiciously utilized their finances.

(iv) A total of 56.5% of the respondents were below 51 years of age, which indicates that they were in their active ages.

(v) The respondents were mostly (51.5%) large sized households although with fairly low-level of formal education. While the mean farm size was 0.86 hectare.

(vi) The perception status of the food crop farmers to credit utilization shows that majority (63.0%) had a high perception score which was significant (P = 0.01) and positively related with credit size (r = 0.394).

(vii) Out of the selected socioeconomic characteristics; farmers' age, education, and total family size were significant and positively related to credit size.

(viii) Regression analysis revealed that farm experience, extension agents visit, adoption of innovations, farm size and farm output were found to be important factors that influenced variations in credit size utilized. Also credit size, farm labor and operating expenses significantly influenced farm output.

(ix) The major constraints of farmers to credit acquisition and utilization were untimely loan disbursement, inadequate loan, inability to provide collateral, high interest rate and bureaucratic processing of loan.

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APPENDIX

FEDERAL UNIVERSITY OF TECHNOLOGY, AKURE

DEPARTMENT OF AGRICULTURAL ECONOMICS AND EXTENSION

RESEARCH TOPIC: EFFECT OF CREDIT ON FOOD CROP PRODUCTION AMONG SMALL SCALE FARMERS IN ONDO STATE

INTERVIEW SCHEDULE

This research questionnaire is for academic purpose. Your response would be treated confidentially.

(A) DEMOGRAPHY CHARACTERISTICS:

Local Government Area:---------- Town/Village:----------

(1) Age of Respondents:----------Years----------

(2) Gender: (i) Male ( ) (ii) Female ( )

(3) Marital Status: (i) Single ( ) (ii) Married ( )

(iii) Divorced ( ) (iv) Window ( ) (v) Separated ( )

(4) What position do you occupy in the community?

(i) Ordinary citizen ( ) (ii) Household head ( )

(iii) Traditional/Religions chief ( ) (iv) Civil servant/Public servant ( ) (v) Oba/Community Head ( )

(5) What is your highest level of educational attainment?

(i) Ordinary citizen ( ) (ii) Adult literacy education ( )

(iii) Incomplete primary school ( ) (iv) Complete primary school ( )

(v) Incomplete secondary school ( ) (vi) Complete secondary school ( ) (vii) Others specify:----------

(6) What is the size of your family?

No of wives:----------

No of children:---------- Other dependants:----------

Total Family size:----------

(7) Give your occupation?

Primary occupation:----------

Secondary occupation(s)----------

(8) (a) What is the estimated size of your farm in 1999?----------ha.

(b) Total land area you have access to:----------ha.

(9) How many years have you been into farming:----------years

(10) Which of the following food crops do you grow?

Major food Crops		Minor Food Crops	
Maize	( )	Cocoyam	( )
Cassava	( )	Beans	( )
Yam	( )	Plantain/Banana	( )
Rice	( )	Vegetables and Fruits	( )
		Sweet Potatoes	( )

(11) Rank the following crops in descending order of importance to your according to the basis stated thus: No 1 being the most important.

Crop	Consumption	Cash Income	Social Ceremony	Ease of Cultivation
Maize				
Cassava				
Yam				
Rice				
Cocoyam				
Beans				
Plantain/Banana				
Vegetables and Fruits				
Sweet Potato				

(12) How did you acquire your farmland?

(i) Inheritance ( ) (ii) Purchase ( ) (iii) Gift ( )

(iv) Leasehold ( ) (v) Communal ( ) (vi) i & ii ( )

(vii) i & iv ( ) (viii) ii x& iv

(13) How do you normally obtain labor for farm work?

(i) Self-labor ( ) (ii) Family labor ( )

(iii) Hired labor ( ) (iv) Rotatory labor ( )

(i) Other specify:----------

(B) CREDIT UTILIZATION:

(14) What proportion of your farm finance sources is from the following sources:

Sources		Proportion (%)
(i)	Personal Savings	
(ii)	Gift form friends and relations	
(iii)	Loan from individuals and money lenders	
(iv)	Loan from Commercial Banks	
(v)	Loan from Nigeria Agric. And Co-op Bank	
(vi)	Loan from Co-operative Societies	
(vii)	Other Sources (Specify)	

(15) How much value of loan did you request for and how much did you receive in the previous two years?

Year	Amount requested (₦)	Amount approved (₦)	Amount Received (₦)
1999			
2000			

(16) (a) Which month of the year did you request for the last loan:----------

(b) Which month of the year were your granted:----------

(17) How long have you been using credit?:----------Years

(18) Which out of the following emergencies did you use the balance of your loan on?

(i) Purchases of Vehicle ( )

(ii) Paying children's school fees ( )

(iii) On my house building ( )

(iv) Liquidating previous debts ( )

(v) Marrying more wives ( )

(vi) Social Ceremonies ( )

(vii) Chieftancy ceremony ( )

(viii) Others (Specify):----------

(C) EFFECT OF CREDIT ON PRODUCTION LEVELS:

(19) How much did you spend on the following in 1999 season (in N)

(i) Hiring labor:----------

(ii) Buying seed or planting materials:----------

(iii) Acquiring additional tools and equipment:----------

(iv) Buying fertilizer:----------

(v) Buying other agro-chemical (insecticide, herbicides):----------

(vi) Hiring tractors:----------

(20) If you were to hire one acre of land in your locality, how much would it cost you? ₦:----------

(21) For each of the following enterprises, how much did you spend?

(i) Maize Production ₦

(ii) Cassava Production ₦

(iii) Yam Production ₦

(iv) Rice Production ₦

(v) Cocoyam Production ₦

(vi) Beans Production ₦

(vii) Plantain/Banana ₦

(viii) Vegetables and Fruits ₦

(22) (a) Has your farm increased in size Yes ( ) No ( )

(b) If yes, what has contributed to increase in size of your farmland over the years

(i) Ease of availability of land ( )

(ii) Availability of loan/credit ( )

(iii) Ease of obtaining labor ( )

(iv) Increase in family living expenses ( )

(v) Need to increase income ( )

(vi) Availability of farm inputs ( )

(23) Which of the following practices do you use

(i) Improved seed and other planting materials

(ii) Farmers' recommended-spacing/optimum plant population

(iii) Application of fertilizers

(iv) Seed dressing chemicals

(v) Herbicide/weed killers

(vi) Use of tractors for land preparation

(vii) Stored produce chemicals.

(24) What was your farm output in the 1999 season Quantity Unit Price Revenue

(i) Maize on cob (bags)

(ii) Yam tubers (No and size)

(iii) Cassava (bags of garri/tubers)

(iv) Rice Paddy (bags) Total

(E) FARMERS PERCEPTION OF CREDIT PROGRAMME:

(25) This study aims at finding your opinion to credit use as a food crop farmer. To what extent do you agree with the following. Kindly indicate your level of agreement/disagreement with each of the reasons stated below by circling letter corresponding to your level of agreement SA = Strongly Agreed; A = agreed; U = Undecided; D = Disagreed, SD = Strongly Disagreed.

Reasons	Level of agreement				
a) To give people the opportunity of getting loan to start or expand their trade or execute their business plans:----------	SA	A	U	D	SD
b) To meet farmers' credit needs and free them from the burden of informal creditors:----					
c) To enable farmers spend part of government money (their share of the national cake---					
d) To give loan to farmers to enable them buy more farm tools and equipment for use on their farms:----------					
e) To help farmers build or complete or repair their houses:----------					
f) To assist farmer buy motor vehicles/cycles:----------					
g) To help farmers marry more wives:----------					
h) To help farmer cultivate bigger farms:----------					
i) To enable farmers get loan to operate their farms, obtain better yields and improve their livelihood:----------					
j) A means to provide employment for the people:----------					
k) To help farmers get money to pay their children's/Ward school fees:----------					
l) To help farmers increase their farm output:----------					
m) An avenue to give money to government supporters, party agents or influential people:----------					

	SA	A	U	D	SD
To help farmers increase their net income (revenue) from the farm through loan use:---					
To help farmers get money to spend during native festivals and ceremonies:----------					
To make otherwise costly and in-accessible farm inputs accessible to farmers:----------					
To enable farmers feed themselves and their families:----------					
To help farmers adopt improved farm technology (Practices):----------					
To assist farmers take care of their sick family members or relatives or friends:----------					
To make more food available for all to eat:----------					
To enable farmers pay their previous debts:----------					
To give people financial assistance as long as they can repay:----------					

(F) PRODUCTION MOTIVES AND CONSTRAINTS:

(26) Why do you grow the various crops mentioned

(i) For family consumption

(ii) To generate income

(iii) Government encouragement

(iv) Lack of employment

(27) What are your constraints to credit use?

(i) Interest rate is very high ( )

(ii) Too much bureaucracy in obtaining loan ( )

(iii) Cost of obtaining loan is too much ( )

(iv) Inability to provide collateral or guarantor ( )

(v) Loan is inadequate ( )

(vi) Lack of timely disbursement of loans

(vii) Other specify:----------

(28) What suggestions do you have for improvement of credit delivery to farmers?