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Analysis of the Cost and Economic Returns in Rice Production among Micro Finance Banks Loan Beneficiaries in Kebbi State, Nigeria

Gulma, H.I.¹, GIndi, A.A.², Jega, A.A.², and Mohammed, I.U.³

¹Department of Agricultural Education. Adamu Augi College of Education Argungu, Kebbi State

²Department of Agricultural Economics and Extension. Kebbi State University of Science and Technology Aliero, Kebbi State, Nigeria

³Department of Crop Science. Kebbi State University of Science and Technology Aliero Kebbi State, Nigeria

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This study was conducted in kebbi state north western Nigeria, to analysed the cost and economic returns in rice production among microfinance banks loan beneficiaries in the state. Data for this study were collected through primary and secondary sources. Yamane's formula was used to determine the sample size. A multi stage sampling techniques was employed and simple random sampling was used to select the respondents for the study. Demographic variables explored revealed that majority (83.8%) of the small holder rice farmers were males with mean age of (41.71%) years and most (47.7%) having secondary education. Average cost and returns in rice production shows that total variable cost accounted for (78.39%) of the cost of production while total fixed cost accounted for only (5.48%). Benefit cost ratio was (2.77), while operating ratio was (0.28) which shows high profitability. It was concluded that microfinance banks loan has encouraged the small holder rice farmers to increase their production. Finally a called was made for the need to increase availability of accessibility to financial services for the farmers.

Keywords: Analysis, Bank loan. Production, Economy, Rice, Kebbi state.

INTRODUCTION

The main purpose of Agriculture is to provide food and raw materials for human used despite the fact that Nigeria is blessed with abundant human and natural resources which are favourable for agricultural development. Agriculture in Nigeria is dominated by resource poor farmers who are responsible for about 90% of the total production (Enimu, Igiri and Uduma, 2015) these farmers are characterised by low farm incomes and low technological inputs, however several efforts have been made by successive government, with view to improving the situation, some of which include the introduction of the National Acceleration Food Production Project (NAFPP) in 1970, the Nigeria Agricultural and

Cooperative Bank (NACB) in 1973, Operation Feed the Nation (OFN) 1976), Agricultural Credit Guarantee Scheme Fund (ACGSF) in 1979, Green Revolution (GR) Programme in 1980. Agricultural Development Programme (ADP) in 1986, Peoples Bank (PB) in 1988, Nigerian Bank of Commerce and Industry (NBCI) in 1993, National Seed Service (NSS) 1995 etc.

In all these policy issues there is little consensus with respect to the most appropriate strategy for securing increase farm output and productivity in an under developed agriculture like that of Nigeria. It however noted that whatever the programme package or technological innovation introduced to improve Agriculture, it adoption and use will to a large extent be dependent on agricultural production and on farmers ability to finance such innovation (Obianefo et al 2020).

In recognition of this fact, the Nigerian government

*Corresponding author's e-mail: abccrcfge28@gmail.com

institutionalized the community banking system by Decree No. 46 of 1992 with primary objective of promoting grass roots self-reliant economic development through the provision of finance and other banking services at the local level by 2005, the central bank of Nigeria (CBN) under other financial services department carried out a restructuring of the financial sector, this restructuring led to the change of name from community banks (CBS) to Microfinance banks (MFBs). The microfinance banks since their inception have functioned for many years in Nigeria with main goal of providing financial services to the low level income farmers who are traditionally not served by the conventional financial institution. Microfinance bank help an individual to become independent economically and provide additional income generating activities. Access to microfinance bank can be viewed as a growth of the efficiency of small holder farmers and contributing to elevation of their livelihood (Terfa, 2018)

At present, there is little or no information on farmers beneficiaries of micro finance banks loan and the implication of such loan on the economic life of the farmers. This study aimed at describing the demographic information of the small holder farmers and analysing the cost and returns in rice production. This will no doubt assist in assessing the performance of microfinance banks in financing the activities of small holder farmers in Kebbi state.

Statement of Research Problem

Agricultural credit constitutes the power or Key to unlock latent abilities. Opportunities, which in turn act as mover of economic development (Ajekigbe, 2016). Capital is a Key constraint in the process of agricultural development in most developing countries. This is because most farmers' developing countries are smallholder farmers with low income levels resulting to Low Saving and investment. Rural credit has proven to be a powerful instrument against poverty reduction leading to food security and development in rural areas. Agricultural credit enhances productivity and promotes standard of Living by breaking vicious cycle of poverty of farmers. (Gandlimathi, 2014) The Federal Government of Nigeria noted credit as one of the pre-requisite for increase agricultural output, created micro finance bank with mission of improving production of the smallholder farmers, which in turn increase both their productivity and livelihood.

Due to the variability of the factors of production as well as attitudinal behavior of smallholder farmers, it is not certain whether the objectives were achieved. Several studies have been carried out on micro finance credit such as Okoroji *et al*, (2022) who studied microfinance services and agricultural production; a case study of small holder rice farmers in Anambra state, Nigeria. Another research by Enimu *et al* (2016), on the effect of micro finance bank loan on the livelihood of small holder

farmers in delta state, Nigeria; likewise Thritha (2013) work on the effect of access to micro credit finance in Nairobi Kenya, Hanad (2010) work on micro credit participation and Nutrition outcomes among women in Peru republic. Alinovi *et al*, (2010), determinants of livelihood diversification in pastoral societies; Enyew (2012), work on food security dynamics and correlation among rural households while little or none were found to assess effects of micro finance banks on smallholder rice farmer's livelihood especially in the north Western Nigeria. Different studies at different parts of the world reports on failure of agricultural credit schemes for the smallholder farmers.

This situation may likely affect the livelihood of the farmers. Thus, there is need to understand the present situation and its attendant effect on future accessibility to loan to the small holder farmers. In view of this, the study provided answers to the following research questions, with regards to the effects of microfinance bank on smallholder rice farmer's livelihood in Kebbi State:

- i. What are the socio-economic characteristics of smallholder rice farmers in the study area?
- ii. What is the livelihood capability of the smallholder rice farmers in the study area?
- iii. What are the effects of MFB on the livelihood of the small holder rice farmers in the study area?
- iv. What is the gross margin of the smallholder rice farmers in the study area?
- v. What are the constraints faced by small holder rice farmers in securing loan from MFBs in the study area?

Objectives of the Study

The broad objective of the study was to assess the effects of microfinance bank on smallholder rice farmer's livelihood in Kebbi state.

The specific objectives were to:

- i. Describe the socio-economic characteristics of the smallholder rice farmers in the study area.
- ii. Evaluate the smallholder rice farmers livelihood Capability in the study area.
- iii. Determine the effects of MFB on the livelihood of the small holder rice farmers in the study area.
- iv. Analyze the gross margins of the smallholder rice farmers in the study area.
- v. Determine the constraints faced by the small holder rice farmers in securing loan from MFB in the study area.

Justification of the Study

Generally, there is an acceptance of the important role of farm credit and a wide appreciation by most government of the need for credit in agriculture. Agricultural credit is fundamental to development of household livelihood

which can help farmers to maximize their economic potentials. The findings of the study will provide basis for policy makers in developing an appropriate policy mix, as well as increased agricultural production. It is anticipated that this study will also contribute to available literature on micro finance bank credit. To credit institutions, it is expected to assist them when evaluating credit. Programmes and policy variable to form workable Credit framework in the state and nation in general.

METHODOLOGY

Study Area

The study was conducted in Kebbi state, in the north-western Nigeria with its capital at Birnin Kebbi, located between latitude $10^{\circ}05'N$ and $13^{\circ}27'$ and longitude $3^{\circ}35'E$ and $6^{\circ}03'$. The state has a total land area of 36,800 Sq Km². It is boarded by Niger and Benin Republics to the west and by States of Sokoto and Zamfara state in the north east and Niger state to the south. (KSG, 2013). The state has 4,738,267 people (2019). Approximate using 3.5% growth rate).

The state is made up of four emirate zones of Gwandu, Argungu, Yauri, and Zuru. Consisting of 21 Local Government Areas. The population is largely rural with more than two-thirds of the population depending on agriculture for their livelihoods (KARDA 2007). The state has two distinct climatic seasons. The dry season generally characterized by high temperatures and rainy season last for four to five months in a year, which usually begins in early May, while the heavy fall is experienced between July and August. The climate of the study area encourages the production of crops and animals both during rainy and dry seasons of the year, which makes majority of the inhabitants to choose farming as an occupation. (KSG, 2018).

Sampling Procedure and Sample Size

A Multi-stage Sampling technique was employed in the Selection of sample size in the study. First stage involved Purposive selection of six Local Government Areas, known to have smallholder rice producing farmers with at least one situated microfinance Bank in the area. Stage two obtaining a Sample frame from the micro finance banks situated in the purposive Selected Banks in order to draw a sample size for the Study.

Stage three involved selection of two communities that have high concentration of rice producing farmers and with loan facility from the each of the six Local Government Areas purposively selected, totalling twelve villages. Stage four, Yamane's formula was used to obtain the sample size and a simple random sampling was used to pick the respondents for the study. The formula is stated thus.

$$n = \frac{N}{1 + N(e^2)}$$

$$n = \frac{6525}{1 + 65(0.052)} = \frac{6525}{17.3} = 377$$

n = sample size
N = population
e = Margin error (5%)

Selection of each village sample size was done using the formula stated as

$$Sz = \frac{n}{N} \times 377$$

Sz sample size per village
n = number of beneficiaries in each village
N = population

Data Collection

Primary data was obtained with the aid of structured questionnaire administered through interview with the help of trained enumerators.

Data Analysis

Data analysis was done using descriptive Statistics, such as frequency and percentage and farm budgeting. The farm budgeting model used was of the form:

$$GM = GI - TVC$$

Where

GM = Gross margin
GI = Gross Income
TVC = Total Variable Cost
Profitability Ratios
Benefit Cost Ratio (BCR) = TR/TC

Where

TR = Total revenue
TC = Total Cost
Gross Ratio (GR) = TC/TR

Where

TC = Total Cost
TR = Total Revenue
Operating Ratio (OR) TVC/TR
Where TVC = Total Variable Cost TR = Total Revenue

RESULTS AND DISCUSSIONS

The result in table 1 revealed that about eighty three percent (83.8%) of the respondents were males while sixteen point two percent (16.2%) of the small holder farmers were females. The result shows that, males

Table 1: Demographic characteristic of the small holder rice farmers

Variable	Frequency	Percentage	Mean
Gender			
Male	316	83.8	
Female	61	16.2	
Marital Status			
Single	54	14.3	
Married	287	76.1	
Widowed	32	8.5	
Divorced	4	1.1	
Age			41.71
18-25	14	3.7	
26-35	74	19.6	
36-45	166	44.4	
46-55	85	22.6	
56-65	35	9.3	
66 and above	3	0.8	
Educational Status			
Religious Education	94	24.9	
Primary education	61	16.2	
Secondary education	180	47.7	
Tertiary education	35	9.3	
Adult education	7	1.9	

Source Field Survey 2023

dominate rice production in the study area. In spite of the dominance by males, it showed that both males and females accessed microfinance bank loan for their rice production. The result also indicates that most of the farm work and other activities are performed by men. This could be as a result of religious and or cultural norms in some cases where men participate in work at farm and women remain at home engaging in domestic activities. The study is in line with that of Ayandiji and Ademiyi (2011) who pointed out that in similar study that males have dominated production activities unlike their female counter part. Marital status is another important variable studied. Getting married by especially male child is an important aspiration of the parent in northern Nigeria, as this help in bringing more males and or females into the family that provide cheap or free needed agricultural labour to the family.

The result shows that about seventy six percent (76.1%) of the small holder rice farmers were married, about fourteen percent (14.3 %,) single, about eight percent (8.5%) widow and only one percent (1.1%) are divorced. The result indicates that more married small holder farmers were involved in rice production than the single small holder farmers. The higher percentage of married small holder farmers in the study area may be attributed to the socio-cultural and religion believe of the community members where marriage is encouraged and is termed as a sign of responsibility and it's one of the religious obligations of the people in the northern parts of Nigeria (Ango et al, 2011). In addition being responsible will facilitate accessing micro finance bank loan, as the bank preferred transacting with farmers that are seen responsible. The finding agreed with that of Enimu et al

(2016), who reported similar result in their study on analysis of the effects of micro finance bank loans on the livelihood of small holder rice farmers in Delta state, Nigeria.

Age is one of the factors affecting decisions and actions made in agriculture, because people's thoughts, behaviour and needs are primarily related to their ages. The results revealed that forty four percent (44%) of the respondents were between 36 to 45 years of age about twenty two percent (22.6%) were between 46 to 55 years of age, about nineteen percent. (19.6%) are between 26 to 35 years of age, about nine percent (9.3%) are between 56 to 65 years of age, and about three percent (3.7%) are between 18 to 25 years of age. The mean age of the small holder rice farmers was about forty one percent (41.7 1%). This implies that the production activities are wide spread among the farmers who are in their active age of life which indicate that they have potential for accessing micro finance bank loan, as the bank preferred farmers with potential of utilizing the loan for production. The findings agreed with that of Ibrahim et al (2021) who made similar findings in their study on costs and returns analysis of rice production under rainy season in Bimin Gwari Local Government Area, Kaduna state, Nigeria. The ability of farmers to understand and adopt improved farming practice depend to a large extent on the level of education of the farmer. The higher the level of education, the faster or readily the farmers could accept and adopt new innovation or improved production practices, to enhance their productivity (Jatto, 2012). The finding revealed that all the respondents have one form of education or the other, but majority of the respondents have attained secondary education which accounted for

Table 2 Average Costs and Returns in Rice Production (p4/ha)

Variable	Cost (NaN/ha)	Percentages
Variable Inputs		
Seed(muds)	8435.10791	4.16
Fertilizer (kg)	67469.7986	33.24
Agro chemicals (lit)	8606.17986	4.24
Petrol/Engine Oil (lit)	5164.51799	2.54
Labour Inputs		
Land preparation	9992.7482	4.92
Planting	14292.1223	7.04
Fertilizer application	3470.22302	1.71
Weeding	25841.0791	12.73
Harvesting	13189.1295	6.5
Agrochemical application	2661.10791	1.31
Total Labour Cost	69440.41003	34.21
Total Variable Cost (TVC)	159122.01439	78.39
Fixed Cost		
Rent/Deprin on machine	11119.0216	5.48
Total Fixed Cost (TFC)	11119.0216	5.48
Total Marketing Cost (MC)	21608.9712	10.65
Total Cost of Enterprise (TVC+TFC+MC)	202969.02166	100
Revenue Component		
Average output (bag/ha)	25.1079	137
Pnce (/bag)	16121	9784
Gross Revenue (lha)	562655	791
Net Profit (N/ha)	370805.791	
Profitability indices		
Benefits Cost Ratio	2.77	
Gross Ratio	0.36	
Operating Ratio	0.28	

Source Field survey 2023

about forty seven percent (47.7%), followed by religious education with about twenty four percent (24.9%). Formal education help in the acquisition of require skills for the proper understanding of modern technology whose demand goes beyond the traditional skills, not only that it invariably facilitate accessing micro finance bank loan through adherence to stipulated guidelines and procedures. The result also agreed with Jatto (2018) who made similar finding in his study, on assessment of loan default among farmers and its implication on food security in Kwara state Nigeria.

The results of analysis of the costs and returns (Table 2) revealed that, the average cost of production incurred by the respondents was 202969.02ha. The total cost incurred consists of all the costs involved. The total variable costs dominated the production costs accounting for about seventy eight percent (78.39%), while the total fixed costs constituted only about five percent (5.48%) of the production costs. This explained the importance- of accessing micro finance bank loan by the small holder rice farmers as the loan acquired helped them to procure necessary input for their rice production. The findings agreed with that of Daudu et al (2014) and Peter et al (2020) who both reported that total variable costs dominated production costs in their respective studies.

Labour accounted for (34.21%) of the cost of production. This could be explained by the labour intensive nature of rice production. This agreed with findings of Chidebere-mark et al (2014) who reported that human labour was a significant cost item in production.

The average total cost (Naira) per hectare was 202969.02h&'. The average costs Naira per hectare was 251,079137. The gross revenue naira per hectare was N562,655.791 while the net profit naira per hectare was 370,805.791. This is an indication that the micro finance bank loan secured by the small holder rice farmers has invariably contributed to this level of profit obtained by the farmers. The findings agreed with that of Tarfa and Kiger (2013) who reported high profit in their study. UDP and rice production in Nigeria the experience so far, conference on guiding investment in sustainable intensification in Africa. This high profit margin could be majorly contributed by the support from micro finance bank.

Profitability Indices

Some economic and profitability ratios were estimated to measure the economic performance of small holder rice farmers production in the study area. The benefit cost

ratio (BCR) was 2.77 which is greater than one (>1) indicating that small holder rice farmers farming is profitable with little capital investment. The gross ratio (GR) was estimated to be 0.36 from the study, this implies that for every one hundred Naira (100) return to the enterprise thirty six naira (N36) was spent. Olukosi and Earhabor (1998) pointed that a gross ratio of less than one is desirable for any farm business. An operating ratio (OR) of less than one indicate a good, efficient and profitable business Enimu *et al* (2016), hence an operating ratio of 0.28 shows higher revenue over variable costs.

The findings of the study conformed to that of Ibrahim *et al* (2021) who reported similar results in their study on costs and returns analysis of rice production under rainy season in Birnin-Gwari local government area, Kaduna state, Nigeria.

CONCLUSION

Majority of the small rice farmers are within their active age and many of them have gain experience in farming a access to micro finance bank loan has encouraged them to enhanced their rice production. Small holder rice farming is highly profitable in the study area. It is therefore a great venture in the study area that can be used to alleviate poverty among small holder farmers if supported financially through provision of credit.

RECOMMENDATIONS

Microfinance banks in the study area have been successful in raising income levels of the farmers and remain the greatest tool with a potential of alleviating food insecurity among small holder farmers. Therefore there is the need to increase availability and accessibility to financial services for the farmers as this could help them to resolve some of the impeding challenges including labour and adoption of new technology. Also most of the small holder rice farmers attained only secondary education, there is the need to encourage them to further their education as this will go a long way in improving their human capital with view to improve their livelihood.

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