EFFECT OF RURAL LABOUR MIGRATION AND OFF-FARM EMPLOYMENT ON FOOD CROP FARMERS INCOME IN NIGER STATE, NIGERIA.

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Abstract

The study analyzed the effect of on Rural Labour Migration and Off Farm Employment on Food Crop Farmers' Income in Niger State, Nigeria. Data used for the study were obtained from primary source using a multi-stage sampling technique and questionnaires administered to 90 randomly selected food crop farmers from Niger State. Farm Budgeting Analysis was used to determine the income of the farmers. Inferential statistics such as Logit regression and Ordinary least square model were used to determine the factors influencing rural labour migration and the effect of off-farm employment and rural labour migration on food crops farmer's income in the study area.The results revealed that the enterprises was profitable venture with total revenue of ₦96,150.12, gross margin was ₦39,400.12 and the profitability ratio is 0.64. This study also indicated that the factors influencing rural labour migration were age, level of education, household size, off farm income and employment opportunities. The study also showed that the factors affecting off farm employment and rural labour migration on food crop farmers' income were; farm size, labour, seed, agrochemical, level of education and farming experience. Therefore, the study recommended that farmers should maintain their current level of production

Keyword: Income, Food Crops, Rural migration, Off farm employment, Niger States.

1.INTRODUCTION

1.1. Background of the study

The agricultural sector in Nigeria was a major source of employment prior to the discovery of oil in commercial quantity. Then Nigeria was known with the production and export of food crops and other agricultural crops in Nigeria. The discovery of oil at large scale exploration in the 1970s turned the tide against the agricultural sector in favour of the oil sector. For instance, as at year 2000, oil and gas exploration accounted for more than 93% of export earnings and about 82% of federal government revenue (NBS, 2012). Irrespective of this high revenue from the oil sector, the paradox of it all is that over 70% of the Nigerian population is engaged in agricultural production (Olaitan, 2006).

The role of agriculture remains significant in the economy of Nigeria despite the strategic importance of the oil sector in the foreign revenue of the country. Agriculture provides primary means of employment for Nigeria and accounts for more than one third of total Gross Domestic Product (GDP) and labour force (Ismaila *et al.*, 2010).

Rural areas usually provide two categories of income sources to their dwellers, which are agriculture and the off-farm employment. Current report indicates that among 3 billion people living in rural areas in the world, 2.5 billion people derive their livelihood from agriculture (FAO, 2013). The contribution of the rural off-farm employment to rural livelihoods is also not inconsequential in rural areas. For instance, the off-farm economy accounts for about 37 percent of rural incomes

in Africa while it goes even beyond 50 percent in Asia (Haggblade *et al.,* 2007). The need for improvement in rural farmer's well-being and standard of living had led to movement from one place to another in search of better opportunities.

Human migration is a physical movement of humans from one district to another, sometimes over long distances, in singles or in large groups.

Labour migration is one of the main factors that affect farm labour supply. Nigerian youths tend to look down upon farm labour but prefer to migrate from rural areas to urban centres where they hope to get job opportunities and other social amenities. This attitude is the main problem confronting the rural labour supply in Nigeria. Harris (2007) opines that it is generally the youth who migrate or leave the rural places and its styles of work to seek better opportunities elsewhere. After more than 50 years of independence, rural Nigeria has not significantly changed. Agriculture has remained the primary occupation and source of earnings for rural dwellers.

Specific Objectives

1 determine the income of the farmers

2 determine the factors influencing rural labour migration

3 determine the effect of off-farm employment and rural labour migration on food crops farmer's income

1.2. Theoretical Framework

The terms "off-farm" and "off-agricultural" normally appear in synonymous ways. Phimster and Roberts (2002) concluded that the importance of off-farm earnings in helping to maintain farm households is well recognized. Off-farm work does affect farm production decisions, policies that encourage the provision of off-farm employment opportunities may also impact upon the environmental services provided by farm households. Similarly, off-farm employment refers to all income-generating activities except crop and livestock production and fishing and hunting, located in areas that are mainly servicing agricultural activities (Lanjouw, 2001).

Labour migration tends to reduce the availability of labour, which leads to scarcity and high cost of labour. Although, migration have been found to increase migrant households' income, smooth consumption and reduce exposure to shocks affecting agricultural production, encourage investment in agricultural productive assets, housing and other consumer durable goods, children's education, and contribute to the diversification of rural economy in their source communities.

2.METHODOLOGY

The study was conducted in Niger State, Nigeria. Niger State was created out of the former North Western State and became a fully autonomous State on 3rd February, 1976 with her headquarters at Minna. The State comprises 25 Local Government Areas (LGAs). Niger State is located between Latitude 8^0 22'N and 11^0 30'N and Longitude 3^0 30'N and 7^0 20'E. The major tribes in the State comprise the Nupes, Gbagyis, Kambaris and Hausas (Niger State Geographic Information System (NIGIS), 2007). The State shares common boundaries, to the North, with Zamfara State, to the North-East, Kaduna State, and South-East, with the Federal Capital Territory. It also shares an international boundary with Benin Republic at Babanna in Borgu Local Government Area of the State. It occupies a land mass of 74,244 km^2 (about eight percent of the country's total land area) which makes it virtually the largest State in Nigeria (NIGIS, 2007), with over 3, 950,249 inhabitants (National Population Commission (NPC), 2006).

Sampling Procedure: A multi stage sampling technique was used. The first stage involved random selection of three (LGAs) the State. The second stage involved random selection of two farming communities from each (LGAs) while the third stage involved random selection of fifteen farmers from each farming communities in the State. making a total of ninety farmers in all.

2.1. Analytical Techniques: Farm Budget Tool

The farm budget tool or budgetary technique involves the cost and return analysis. It was used in determining the cost and returns of food crop farmers in the study area. The profitability analysis that was employed comprises of the Total Fixed Cost (TFC), Total Variable Cost (TVC), Total Cost (TC), Total Revenue (TR), Gross Margin (GM) and Net Farm Income (NFI).

TC= TVC + TFC

.... (1)

TR = P * Y (Where; P = Price and Y = Total output)
.... (2)
GM = TR – TVC
.... (3)
NFI = GM – TFC
.... (4)

In addition to the above illustrations, the profitability will also be determined with the use of ratio analysis such as:

Expense Structure ratio = Fixed cost/Total cost
Benefit cost ratio (BCR) = Total revenue/ Total cost
Gross ratio = Total Cost/ Total revenue
Profitability ratio = Net return**/** Total cost.

Logit Regression Analysis: was used to determine the factors influencing rural labour migration in the study area.

Ordinary Least Squares (OLS): was used to determine the effect of off-farm employment and rural labour migration on food crops farmer's income in the study area

3.MODEL SPECIFICATION

3.1. Logit regression

Logit regression model was the model used to determine factors that influence dependent variable which is a qualitative choice variable that is binary. The implicit form of the model is given as:

$Y = f(X_1, X_2, X_3, X_4,...............X_n + U_n)$
....(5)

The general logit regression model in its explicit form is expressed as below:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 +..... \beta_{10} X_{10} + e$
....(6)

Where,
Y = Rural labour migration (Migration of family member who should have been part of the family labour in the cropping season= 1, Otherwise = 0)
α = Model intercept
X_1 = Age (in years)

X_2 = Level of education (number of years spent in school)
X_3 = Land ownership (owned = 1, otherwise = 0)
X_4 = Farming experience (in years)
X_5 = Household size (number of people living with respondent)
X_6 = Off-farm income (in Naira)
X_7 = Extension visit (number of visits)
X_8 = Employment opportunities (available = 1, otherwise = 0)
X_9 = Distance from city (Km)
β_{1-9} = Coefficients of the independent variables)
$X_1 – X_9$ = Independent variables
e = error term

Ordinary Least Squares Regression: This model was used because the dependent variable (Y) income was not binary. The implicit form of the regression model is expressed as below:
$Y= f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8+ X_9 +u)$
....(10)
Where,
Y = Farmer's income(Naira)
X_1= Farm size (ha)
X_2= Labour usage (man days)
X_3 = Credit (Naira)
X_4 = improve variety (yes= 1, otherwise= 0)
X_5 = Agrochemical (litres)
X_6 = Age of farmers (years)
X_7= Educational level (years)
X_8 = Farming experience (years)
X_9 = Household size (number of people)
u = error term

4.RESULT AND DISCUSSION

4.1. Cost and Return of Food Crop Farmers

The cost and returns analysis which indicate the profitability in production of the farmers in the study area is presented in Table 1. The cost and return analysis revealed that total variable cost was ₦56,750 representing 96.8 percent of the total cost of production per hectare per food crop farmer in the study area, while total fixed cost was ₦1,900.17 representing 3.2 percent of the cost of food crop production. However, cost of fertilizer ₦25,000 was the highest among the variable cost of production representing 42.6 percent, followed

by cost of labour ₦8,000 (13.6 percent) and cost of agro chemical at ₦7,500 (12.8 percent). This implies that almost 14% of the expenses incurred in food crops production in the study area come from labour usage alone; hence labour is an important factor of production which farmers should put more emphasis on in order to maximize profit. The result is in line with the findings of Akanbi, Omotesho and Ayinde (2011) who reported that fertilizer, labour and agrochemicals were parts of the most important inputs in crop production in Nigeria. However, the total revenue, gross margin and net farm income of the food crop farmers was ₦96,150.12, ₦39,400.12 and ₦37,499.95 respectively, with a profitability ratio of 0.64. This indicates that for every ₦1 invested by the cereal crops farmers, 64 kobo is make in returns which implies that the enterprise is profitable

Table 1: Cost and Return Analysis for Food Crop Production

Items	Cost and Return (₦)/ha/farmer	% of Total Cost
Variable Costs		
Cost of improved seeds	4,000	6.8
Cost of fertilizer / manure	25,000	42.6
Cost of agro-chemicals	7,500	12.8
Cost of hiring tractors	6,500	11.1
Cost of labour	8,000	13.6
Cost of transportation	2,500	4.3
Cost of storage	1,750	3.0
Cost of processing	1,500	2.6
Total Variable Cost (TVC)	56,750	96.8
Fixed Costs		
Farm tools depreciation	350	0.6
Farmland depreciation	1,550.17	2.6
Total Fixed Cost (TFC)	1,900.17	3.2

Total Cost (TC) = TVC + TFC	58,650.17	100.00
Returns		
Total Revenue	96,150.12	
Gross Margin (GM) = TR – TVC	39,400.12	
Net Farm Income (NFI) = GM – TFC	37,499.95	
Profitability Ratio (NFI/TC)	0.64	

Source: field survey 2018

4.2. Factors Influencing Rural Labour Migration

The results of the logit regression analysis for the factors influencing rural labour migration in the study area are presented in Table 2. The results in Table 2 reveal that age (X_1) and house hold size (X_5) had a negative sign and statistically significant at 10%. This indicates that the level to which food crop farmers migrate decreases with age and house hold size, the younger the age and smaller house hold size, the higher the level of migration which shows that younger people with small family size tend to migrate more. The result also show that level of education (X_2) and Employment opportunities (X_8) had a positive relationship and significant at 1%. This implies that increased in these variables led to increase in rural migration in the study area.

The result indicates that the farmers that had higher level of education significantly migrate to meet their educational requirement. The result also implies that lack of employment had contributed significantly to migration of people in the study area. This may be due to the absence of industries such agro-allied industries and other institutions that can employ people in the rural areas. Therefore, level of education and employment opportunity is one of the essential reasons for people movement to urban cities for the greater opportunities.

Table 2: Logit Regression Coefficients of the Determinants of Rural Migration

Variables	Coefficients	Z – value
Constant	-1.8670	-1.83*
Age	-0.0566	-1.92*
Education	0.0867	3.52***

Experience	0.0245	0.85
Land ownership	0.7346	1.55
Household size	-0.0621	-1.79*
Off-farm income	0.0231	1.93*
Extension contact	0.0124	1.14
Employment opportunities	0.8931	3.40***
Distance	0.3101	1.21
Pseudo R-squared	0.3813	
Chi-squared	51.42***	
Log likelihood function	-100.43142	

* Significant at 10% and *** significant at 1%
Source: Field Survey, 2018.

4.3. Effects of Off-farm Employment and Rural Labour Migration on Food Crop Farmers Income in the Study Area

The result of the regression model showing the effect of off-farm employment and rural migration on farmer's productivity in the study area is presented in Table 3. From the regression analysis result, output of the double-log regression gave the best fit based on the significance of the F-value, the value the coefficient of determination (R^2), number and signs of significant parameter estimated in conformity with the prior expectation. The R- Square (R^2) value of 0.573 shows that 57.3% variation in the food crop farmers' income was explained by the independent variables included in the model. The result revealed that farm size, labour and level of education were positive and statistically significant at 1% probability level. Cost of seed, agrochemical and farming experience were positively significant at 10% level of probability, respectively. This implies that Cost of seed, agrochemical and farming experience directly influence income of the farmers in the study area, which directly increases the level of output. This agrees with the findings of shows Ojo. (2012) who reported that age, level of education, years of farming experience, farm size, household size, fertilizer use, planting materials and labour were the main factors that lead to profit maximizes profit.

Table 3: Regression estimates on the effects of Off-farm and Migration on Food Crops Income (Double log)

Variables (n=90)	Coefficients	t values
Constant	3.20752	2.47**
Farm size	2.41301	3.16***
Labour	2.31120	2.87***
Credit	-0.12141	-0.98
Seeds	0.51201	1.82*
Agrochemicals	0.01201	1.81*
Age	-0.26715	-0.58
Education	0.17562	3.54***
Experience	0.41230	1.84*
Household size	0.13120	1.20
R^2	0.635	
R^2 – adjusted	0.573	
F – ratio	24.72***	

*** = Significant at 1% level of probability and * = Significant at 10% level of probability. Source: Field survey, 2018.

5.CONCLUSION

In conclusion, the study showed that food crop farmers in the study area were operating at at profit level therefore their should maintain production at that level. The study further showed that level of education and employment opportunities were the major reason for migration to the urban area.

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