



DETERMINANTS OF OFF-FARM LABOUR PARTICIPATION DECISIONS AMONG FARM HOUSEHOLDS IN OYO AGRICULTURAL DEVELOPMENT ZONE, OYO STATE, NIGERIA



A. E. Obayelu*, E. O. Oyedepo and I. T. Adekanmbi

Department of Agricultural Economics & Farm Management, Federal University of Agriculture Abeokuta, Ogun State, Nigeria

*Corresponding author: obayelu@yahoo.com

Received: May 15, 2017 Accepted: August 21, 2017

Abstract: This research work focused on the determinants of off-farm labour participation decisions of farm households in Oyo Agricultural Developmental Zone (OYSADEP). Primary data were used mainly for the study. Questionnaires were administered to 110 respondents and this was supplemented by oral interview. Data was analyzed using descriptive statistics and logit regression model. Findings from the study revealed that the major off-farm activities in the study area are petty trading (48.2%), hair dressing (13.6%), selling of musical records (8.2%), blacksmithing (6.4%), and hand crafts (5.5%). The reasons for off-farm labour participation of the respondents showed that 84.5% participated to complement their income from farming, 12.7% participated because of self-interest while 2.7% participated because of seasonality in most of the agricultural activities. Majority (54.5%) of the farm households earned less than ₦20,000.00 and the mean value of their income was ₦23,608.00 per month. The factors that influenced off farm labour participation within farm households in the study area are year of formal education ($P < 0.05$) of the respondents, household size ($P < 0.05$) of the respondents, total off farm income ($P < 0.01$) and area of farm land cultivated ($P < 0.01$). The study concludes that, farmers should be encouraged to take up off-farm labour works to serve as a risk mitigating strategy. Participation in off farm labour is capable of regulating farmer's returns in a risky environment such as obtained in agricultural production.

Keywords: Air temperature, climate variability, relative humidity

Introduction

In Nigeria, farming has been the main occupation of the majority of the people living in the rural areas, where most of them are engaged in the production of food to feed the country's population either directly or indirectly (Akindeyin, 2003). Agriculture in Nigeria and Oyo State in particular is still characterized by small scale farming producing about 80% of the total food production for the rapidly increasing population and operating on fragmented farms between 0.5-2 hectares (Salami, 1994). Because farmers in the rural areas belong to the poorest fraction of the population, they only make very little amount of money from their farms. This has resulted in severe food insecurity, rising incidence of poverty as well as low and variable returns from the respective enterprises that make up the farming sector. As a result of this, farmers are saddled with fluctuating farm income.

In a bid to curb the falling farm and household incomes, farmers engage in different other enterprises as a means of diversification (Reardon, 1997). In addition to the enterprise diversification, farmers in the rural areas partake in off-farm labour so as to boost income generation. Farming households who own small farms keep themselves and their household hunger free through engagement in off farm labour. Off-farm activities have become an important component of livelihood strategies among rural households in most developing countries. Several studies have reported a substantial and increasing share of off-farm income in total household income (Ruben and Vanden Berg, 2001). Reasons for this observed income diversification include declining farm incomes and the desire to insure against agricultural production and market risks (Kijima *et al.*, 2006, Matsumoto *et al.*, 2006 and Reardon, 1997).

Over the last three decades, it has become widely accepted in both academic and policy research that rural off-farm activities form a significant component of livelihoods in developing countries. Evidence from field surveys during the 1970s and 1980s across many of these countries shows that self-employment in household based enterprises and wage employments in rural labour markets are both widespread (Chuta and Liedholm, 1990). Furthermore, a large share of households' income comes from off-farm activities (Reardon,

1997; Bryceson, 2000), and earnings from farm and off-farm activities are in fact positively correlated (Hagglblade *et al.*, 2009; Hazellet *et al.*, 1991). These off farm activities are classified into three; the agricultural wage employment involving labour supply to the farm, non-agricultural wage employment including formal and informal non-farm activities and self-employment such as own business (Babatunde, 2008). Off-farm labour activities play a positive role to livelihood sustainability because it functions as a self-insurance from shock and stress. Clearer and Schreiber (1994) identified the need for rural farmers to diversify from business to include improvement in farmer's income generating potential especially during the off season. Therefore, the engagement in off farm activities tend to ensure better means of generating income and to make a maximum use of their resources.

The main objective of this study therefore is to analyse the determinants of off-farm Labour Participation Decisions among Farm Households in Oyo Agricultural Development Zone, Oyo State, Nigeria. The specific objectives are: to show the various off-farm labour activities engage in by the respondents in the study areas, the income generation and distribution from off-farm labour activities and major reasons for participation in off-farm labour in the study areas

Importance of off-farm labour in the Nigerian economy

The importance of off farm labour is growing in Nigeria though the sector is yet to regain its control role in the economy. This is due to the fact that rural farm households are yet to recognize the contribution of occupational diversification which can reduce the hardship faced by the farmers. The growth of off-farm income might be expected to reduce the need for landless rural dwellers to carry out practices in local environment for survival. Off-farm labour as used in this study will adopt as those activities engaged by farmers for survival while away from their farms in order to improve their standard of living.

The agricultural sector is characterized by risk and uncertainty complemented with inconsistent and unfocused government policies, poor infrastructural facilities resulting in low production, high prices of food items, inflation, under development and concomitant poverty. Therefore, the

adoption of off-farm labour will tend to ensure better income portfolio for the rural farmers and as a means of generating more income, basically to make a maximum use of their resources.

Majority of rural farmers are so poor and they live below the average standard of living. They also realize very little income from their farms, whereby they cannot rely on it and cannot feed their household. The poverty situation of rural farmers reflects their standard of living which is due to the seasonal nature of farming, lack of access to farm land, inadequate credit facilities and educational constraints which results in low-level output. A handful of these poor farmers engage in off farm labour in order to generate additional income but it is important to know the motive behind the situations.

Small farm holder agriculture is the dominant occupation of rural Nigerians which is mainly rain fed and characterized by lowland, low labour productivity, and unemployment. With the low level of income from farming in Nigeria, there is a critical need for farmers to divert into off-farm activities. Rural off-farm employment and self-employment are important across all income levels. These forms of employment can be a critical part of the livelihood portfolio of wealthier households, and they can play key roles in the risk mitigation and risk management strategies of poorer households. In many countries, the rural households with the least diversified livelihoods are the poorest ones (International Fund for Agricultural Development, 2011).

The rural economy is no longer confined to the agricultural sector as was the case historically, and evidence from the developing world suggests that rural economic diversity has the potential to foster local economic growth and alleviate the rural-urban income gap and rural poverty (Davis and Bezemer, 2004). Most of the farmers in rural households have opted for various forms of off-farm activities as means of supplementing their regular income generation and making their livelihood better. Thus, these other measures (off-farm enterprise) have been adopted as a way of solving the rural household poverty crisis. Non-farm enterprises (NFEs) are penetrating deep into rural areas, gaining the interest of household dwellers and thus decreasing the number of available labour force for the farming sectors. Evidence from the literature suggests that the share of non-farm sources has been increasing over years and accounts for about 30–45 percent of farm household income (Haggblade *et al.*, 2007). This research was conducted in order to identify the types of off-farm labour activities and to determine the factors that influence off-farm labour participation of farm households in the study area.

Materials and Methods

Study area, data type and methods of data collection

The study was carried out in the Oyo zone of OYSADEP (Oyo State Agricultural Development Programme). OYSADEP is divided into four zones namely; Ibadan/Ibarapa, Oyo, Ogbomoso and Shaki zones). Oyo State is situated within the rainforest region of South-Western Nigeria. Primary data were mainly used for this study and were collected using a well-structured questionnaire which consisted of both open and close ended questions. Secondary sources of information such as periodicals, journals, text books and the internet were also adopted for the study. A multistage sampling technique was used in this study to select the sample size. The first stage was the purposive selection of Oyo zone from the four Agricultural Development Programme zones in Oyo State. Oyo zone was purposively selected based on the findings that many of the farmers in the study area engage in off-farm activities. The second stage was a random selection of three blocks (50%) out of the existing six blocks in the zone. The third stage involved random

selection of 25% of from the existing 8 cells per block. That is, two cells were selected from each of the selected block making a total of 6 cells for the study. In the fourth stage, two villages were selected from the chosen cells using simple random sampling to make twelve villages. From the selected villages, ten farmers each were selected from the villages to make one hundred and twenty (120) farmers. Out of this number, only one hundred and ten (110) farmers were used due to incomplete information provided by the respondents.

Analytical technique

Descriptive tools, such as frequency tables and percentages were used to analyze types of off-farm labour activities of farm households in the study area. Logit regression model was used to analyze the factors that influence off-farm labour participation within households in the study area. The general model for the logistic regression is as follows;

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + \dots + b_{18}X_{18} + U$$

Where

- Y₁ = Participation in off-farm activity (If participate 1, Otherwise 0)
- X₁ - Farm Size (hectares)
- X₂ - Household Size
- X₃ - Marital Status (Married=1, Otherwise=0)
- X₄ - Total monthly off farm income (₦)
- X₅ - Age of Respondents (years)
- X₆ - Years of Formal Education (years)
- X₇ - Farming Experience (hectares)
- U = Stochastic residual error term.

Results and Discussion

Types of off-farm labour among farmers in the study area

The types of off-farm labour activities of farm households as represented in Table 1. Off-farm activities have a great potential to provide employment and additional incomes during the slack season to rural households. In addition, given rising population pressure on agricultural land which results in a decline in land holding per individual, off-farm activities can provide alternative employment. Farmers in the study area are engaged in both self-employment and wage employment. Among the major activities are petty trading (48.2%), hair saloon (13.6%), selling of musical records (8.2%), 6.4% for blacksmith and hunting, respectively. Other activities are handicrafts (5.5%), labour (2.7%), transportation (1.8%), mechanic (1.8%) and fashion designing (2.7%).

Table 1: Types of off-farm labour activities of farm households in the study area

Off-Farm Labour	Frequency	Percentage
Craft	6	5.5
Petty trading	53	48.2
Hunting	7	6.4
Vulcanizing	1	0.9
Fashion designing	15	13.6
Hair saloon	3	2.7
Blacksmith	2	1.8
Transportation	7	6.4
Mechanic	2	1.8
Musician	2	1.8
Artisans	9	8.2

Source: Field Survey, 2016.

Table 2: Reasons for off-farm labour participation

Reasons	Frequency	%
Income Generation	93	84.5
Self/Personal Interest	14	12.7
Seasonality in agricultural activities	3	2.7

Source: Field Survey, 2016

Reasons for off-farm labour participation in the study area

Because of the low production and productivity of the agricultural sector in Nigeria (Agropreneur, 2016) farm households' income is not sufficient even to feed their families. Most of the sample farmers are participating in off-farm activities mainly to complement their agricultural income. Among these households that participate in off farm labour, some of them participated as source of additional income while others, participate because of their self-interest and professionalisms in farming (Table 2). Also found as a reason for participation in off-farm labour was the seasonality of most agricultural activities (2.7%) causing a farm family to have excess labour during the slack season, thereby inducing them to engage in other non-farm activities.

Income generation from off-farm labour activities

In Table 3, majority (54.5%) of the farm household earns less than ₦20,000 per month through off-farm activities, 16.4% earned between ₦30,001- ₦40,000 per month, 17.3 percent earned between ₦20,001- ₦30,000 per month, 8.2 percent earned between ₦40,001-₦50,000 per month, while 3.6 percent earned between above ₦50,001 from off farm activities in the study area.

Table 3: Distribution of Income Generation from Off-Farm Labour by Respondents (Per Month)

Income (₦)	Frequency	%
Less than 20,000	60	54.5
20,001-30,000	18	16.4
30,001-40,000	19	17.3
40,001-50,000	9	8.2
50,001-60,000	2	1.8
Above 60,000	2	1.8
Mean		23,608.91
Standard deviation		15429.26

Source: Field Survey, 2016.

Determinants of off-farm labour participation decision of farm households

Table 4 presents the result of the estimated logit model. The P value of 0.0744 and the Pseudo R² of 0.5957 for the model denote the goodness of fit of the model. The Wald Chi-square =38.26 was significant at the 1% and 5% significant levels, denoting the overall significance of the estimated model. The effect of each explanatory variable on the probability that a respondent engages in off farm work is shown by the parameter estimate. A positive (negative) sign on the parameter estimate of a variable indicates that higher values of the variable will increase (decrease) the likelihood of the respondent's engagement in off-farm work.

Result of the analysis shows that farm size had a significant negative relationship with off farm work at 1 percent level. Its coefficient shows that a unit increase in farm size will decrease participation in off farm work by 7.863 units. This is expected because more hands, time and energy would be expended in farm work with little left for off farm activities. This result corroborate that of Ahituv and Kimhi (2002); Serra *et al.* (2005); Benjamin and Kimhi (2006).

The coefficient for household size also had a significant negative relationship with off farm employment at the 5% level of probability. This is can be because the presence of children in the farm household would have a negative effect on off-farm activities of farmers and their spouses. For instance, a household dominated by children who are minors would imply lesser time for off farm activities because most time would be dedicated to taking care of the children (Goodwin and Mishra (2004). The variable for education coefficient was positive and significant at the 5% level of probability. This is in line with theoretical literature because highly educated people would prefer to work off farm. Scholars such as Araujo (2003) and Serra *et al.* (2005) reported a positive significant relationship between education and off-farm employment.

Table 4: Factors influencing off-farm labour participation decision

Variable	Coefficient	Z	P>Z	Marginal effects
Constant	-27.604	1.5401	0.132	-17.923
Farm size	-0.7863***	-3.0571	0.026	-0.2577
Household size	-0.3564**	-2.0512	0.040	-0.1737
Marital status	0.5310	1.1288	0.268	0.47041
Total monthly off-farm income	0.7532***	3.7792	0.000	0.19930
Age	0.2147	1.5216	0.614	0.14110
Years of Formal Education	0.4452**	2.6421	0.008	0.16850
Farming experience	-0.2681	-1.2137	0.276	-0.2390
Wald Chi-square =38.26				
Prob>Chi ² =0.0744				
Number of observation =120				
Pseudo R ² = 0.5957				

Source: Field Survey, 2016

Conclusion and Recommendations

Results revealed that the prevailing off-farm works in the study area as petty trading (48.2%) and fashion designing (13.6%). The significant determinants of off-farm labor decision considered to be of policy relevant were: farm size, household size, total annual off-farm income and educational attainment of respondents. The study concludes that, apart from mobilizing capital for farm investment, off-farm labour has a double effect as a risk mitigating strategy that is capable of stabilizing farmer's returns in an uncertain and risky environment such as the one where farmers operate in the study areas should be encouraged.

This study recommends that large sized households should be motivated and encouraged to participate in off-farm activities. This can be done through the use of entrepreneurial training and skill acquisition programmes as well as the provision of capital and tools to start up small-scale businesses. Government should provide standard educational facilities, and entrepreneurial classes so as to encourage diversification into off-farm activities. In addition to this, scholarship should be awarded to willing farm households to reduce level of illiteracy. This would help to encourage farming most especially among the younger generation. It will also help in the generation of capital to invest in off-farm activities.

References

- Akindeyin AE 2003. Farm renting, farm pledging and share cropping as correlate of poverty status among farmers in Ondo State. An Unpublished B.Sc Project in the Department of Agricultural Economics, University of Ibadan, pp. 10-14.
- Ahituv A & Kimhi A 2002. Off-farm work and capital accumulation decisions of farmers over the life cycle; the role of heterogeneity and state dependence. *J. Devt. Econ.*, 68(2): 329 - 353.
- Agropreneur 2016. Improving Agricultural Productivity in Nigeria to Boost the Economy and Create Employment. Retrieved on the 12 May, 2017 from <http://blog.agropreneur.ng/2016/08/improving-agricultural-productivity-in-nigeria-to-boost-the-economy-and-create-employment/>
- Babatunde RO 2008. Income Inequality in rural Nigeria: Evidence from farming Households survey data. *Australian J. Basic & Appl. Sci.*, 2(1): 134-140.
- Benjamin C & Kimhi A 2006. Farm work, off farm work and hired farm labour; estimating a discrete – choice model of French farm couples labour decisions. *Eur. Rev. Agric. Econ.*, 33(2): 149 – 171.
- Bryceson DF 2000. Disappearing peasantries? Rural Labour Redundancy in the neo Liberal era and beyond. *Devt. Policy Rev.*, 26(2): 229 – 326.
- Chuta E & Liedholm C 1990. Rural small scale industry: Empirical evidence and policy issues. A Review of Agricultural Development in the Third World, pp. 327 – 339.
- Davis JR & Bezemer D 2004. *The Development of the Rural Non-Farm Economy in Developing Countries and Transition Economies: Key Emerging and Conceptual Issues*. Chatham, UK: Natural Resources Institute.
- Goodwin BK & Mishra AK 2004. Farming efficiency and the determinants of multiple job holding by farm operators. *Am. J. Agric. Econ.*, 86(2): 722 – 729.
- Haggblade S, Hazell P & Reardon T 2007. The rural non-farm economy: Pathway out of poverty or pathway in. *International Food Policy Research Institute*. The Future of Small Farms. Proceedings of a Research Workshop, Wye, UK, pp. 151-178.
- Haggblade S, Hazell PB & Reardon T 2009. *Transforming the Rural Non-farm Economy: Opportunities and Threats in the Developing World*. (No. 58). International Food Policy Research Institute (IFPRI). Baltimore: Johns Hopkins University Press, USA.
- IFAD 2011. Rural Poverty Report. The Challenge of Ending Rural Poverty. Oxford, Oxford University Press for IFAD.
- Kijima Y, Matsumoto T & Yamano T 2006. Non-farm employment, agricultural shocks, and poverty dynamics: evidence from rural Uganda. *Agric. Econ.*, 35(Suppl): 459 – 467.
- Matsumoto T, Kijima Y & Yamano T 2006. The role of local nonfarm activities and migration in reducing poverty: Evidence from Ethiopia, Kenya, and Uganda. *Agricultural Economics*, 35(3): 449-458.
- Reardon T 1997. Using evidence of household income diversification to inform study of the rural non-farm labor market in Africa. *World Development*, 25(5): 35–47.
- Ruben R & Vanden BM 2001. Off-farm employment and poverty alleviation of rural households in Honduras. *World Development*, 29(3): 549-560.
- Seera T, Goodwin BK & Featherstone AM 2005. Agricultural policy reform and off farm labour decisions. *J. Agric. Econ.*, 56(2): 271 - 285.
- World Bank 2005. *World Development Report 2000/2001 Attacking Poverty*. Oxford University Press Inc. New York.