Original Research Article

Determinants of Farmers' Engagement in Non-Farm Activities in Abia State, Nigeria

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Abstract: Rural households engage in non-farm activities with the expectation to bridge the gap in household food security, meet family needs, and alleviate poverty, especially during periods of financial stress, such as the current economic recession in Nigeria. *Against this background, the study* examined the effects of factors that determine engagement in non-farm activities in Abia State, Nigeria. A multi-stage random sampling technique was used to select a sample size of 120 farmers. Data were collected through a structured questionnaire and were analyzed using both descriptive (mean) and inferential statistics, such as multiple regression analysis at 0.05% level of significance. The findings revealed that, household size, profitability of non-farm income, risk of crop failure, economic hardship and low farm income were responsible for engagement in non-farm activities in Abia State. The result of the test of hypothesis of the study revealed a significant influence of the factors that determine engagement in non-farm activities. Hence, the F-test rejected the null hypothesis which stated, that the selected factors do not significantly influence non-farm activities, while the alternative hypothesis was accepted at 5%. The study concluded that the extent of engagement of rural households in non-farm activities was determined by the selected factors considered in the study. The study recommended that processing infrastructure should be provided by the government to enhance diversification of agricultural production as a form of risk reduction strategy to minimize much engagement in non-farm activities, so that food production does not decline because the risks associated with farming, which include crop failure, among others encourage engagement in non-farm activities.
Keywords: Effects, factors, engagement, non-farm, activities.

INTRODUCTION

Several factors can cause farm households to diversify income generation activities (Ellis & Freeman, 2004). (However, Buchenrieder, *et al.*, 2010) revealed that diversification into non-farm activities is important for household survival, economic growth and development of rural areas. Non-farm activities provide options for rural farm households to invest in other activities in adverse situations, such as economic recession, reduction of cultivable lands, conflict or communal crisis, sub-division of land holdings, poor yield, high or frequent increases in farm land rent, population pressure as well as insufficient capital, unexpected crop failure, among other factors (ashid & Tanjila, 2015). Diversifying sources of income has been a major challenge since petroleum was discovered in Nigeria (Madaki *et al.,* 2014). It is worthy of note that in rural areas, household income generation has been supported by engagement in non-farm activities.

(Madaki *et al.,* 2014) further pointed out that, non-farm activity can improve economic growth as it creates more income opportunity than subsistence agriculture. It also enables households to modernize their production by helping them to raise funds, to support farm activities as well as reduce their income shortage during periods of unexpected crop failure. Non-farm activities have been gaining attention compared to its influence on rural household income because interest in boosting agriculture in Nigeria and establishing channels that can help rural farmers to sell off their farm produce declined (Start, 2001; Lanjouw and Shariff, 2002).

However, Nashid and Tanjila (2015) stressed that non-farm income generating activities provide options for rural households in adverse situations. According to the theory of portfolio diversification, households trade-off the relative high mean profitability

of one activity to moderate risk and maximize utility (Ibrahim *et al.,* 2009). A generally known view of development is that, in the practice, structural economic transformation that supports economic development and the share of the farm sector of GDP of a country, will decline as GDP increase (Chenery and Syrquin, 1975). This implies that a dwindling agricultural sector and expanding rural non-farm activities, should be viewed as likely features of economic development (Benjamin, and Kimhi 2007).

A non-farm activity refers to any economic activity other than the production of primary agricultural commodities, livestock and forestry, fishing and hunting (LIFCHASA, 2012). Non-farm activities, thus include mostly processing of agricultural commodities into different forms with private machines, shop-keeping, peddling, petty trading, medium and large scale trading, manual labour- based activities, such as mining, manufacturing, construction, commerce, financial and personal services, self-employed subsistence-oriented cottage industries, wage employment in rural business activities, transport operation, and construction, etc. (Mhazo *et al*., 2008 In: Ndirika, 2011).

It has been observed (Meludu *et al.,*1999); Lanjouw and Lanjouw, 2001) that physical and human capital-intensive activities include commercial type rural industries, including value addition through food processing, trading, basket weaving, shoe making, carpentry, transportation, etc. The types of non-farm activities differ across geo-political locations. According to Ellis and Freeman (2004), generally non-farm activities are divided into two groups of occupations: high labour-productivity that leads to high-income activity and low labour-productivity that provides only as residual source of income.

Rural households in many different contexts have been found to diversify their income sources allowing them to spread risk and enhance consumption (Ellis, 1998; In: Ibrahim *et al.,* 2009). Income from the non-farm economic activities account for half of the total income in Asia, Nigeria and other developing countries. It also allows more income for rural households. It has become generally accepted in both academic and policy research that, rural non-farm activities have a significant effect on income at the rural household level in developing countries. From 1970s and 1980s, evidence from field surveys across many developing countries show that non-farm activities were wide spread (Cornilius, 2004).

The relationship existing between non-farm and farm activities has attracted more attention from those studying this area. It has been asserted in different studies that rural non-farm activity is essential for enhancing living standard as it assists rural farm households in overcoming cash constraints when making decisions (Cornilius, 2004). This view, if true, would be very crucial for maintaining rural household income in developing countries, especially, given the widespread evidence for economic shocks (crop failure) and institutional failures in rural capital markets. In this regard, Non-governmental organizations (NGOs) and development agencies working in developing countries, work to improve rural household income through involving them in diverse sources of income (farm and non-farm activities) (Bernstein *et al*., 1992; Ellis, 1998 and Ellis, 2000). On the other hand, however, it would be a negative effect if expansion of the rural non-farm sector activities will slow down the development of rural household agriculture, which will in turn influence negatively on rural household farm income generation (Low, 1986; Lipton, 1977; and Ellis, 1998). Rural household engage in non-farm activity with the expectation to bridge the gap in household food security, meet family needs, alleviate poverty, which in turn would bring about economic growth and development. Recently, there has been an increase in households' engagement in non-farm activities, especially during periods of financial stress, such as the current economic recession in Nigeria. *Against this background, the study was* designed to determine the relative effects of factors that determine engagement in non-farm activities in Abia State, Nigeria. In this regard, the study hypothesized that factors that determine engagement in non-farm activities do not significantly influence non-farm activities.

METHODOLOGY

The population of the study comprised all the farm households that are involved in non-farm activities in Abia State, Nigeria. A multistage sampling technique was used to select a sample of 120 respondents. In the first stage, two (2) senatorial zones were randomly selected from each state, making a total of four (4) senatorial zones. In the second stage, one (1) Local Government Area was randomly selected from each senatorial zone, giving four (4) Local Government Areas in all. In the third stage, four (4) communities were randomly selected from each Local Government Area, giving a total of sixteen (16) communities. Finally, fifteen (15) respondents were randomly selected from each community. Thus, the sample size for the study was one hundred and twenty (120) respondents.

Data were collected at household level from the participants that engaged in rural farm and non-farm activities, using questionnaire/interview schedule. Data collected for the study were analyzed using mean (a mean of 2.5 and above was regarded as a factor determining involvement in non-farm activities farm activities, while a mean less than 2.5 was not) and multiple regression at 95% confidence level ($P \leq 0.05$).

The multiple regression mode-l is expressed thus:

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + \varepsilon i$$

Where: Y = Extent of engagement in non-farm activity (Dependent variable)
X = Independent variable, where:
X_1 = Age
X_2 = Household size
X_3 = Profitability of non-farm activity
X_4 = Risk of crop failure
X_5 = Economic hardship
X_6 = Information on how to start
X_7 = Low farm income
X_8 = Access to credit
X_9 = Declining farm productivity
b_0 = Constant
$b_1 - b_9$ = Regression coefficients
ε_i = Error term

RESULTS AND DISCUSSION

Table -1: Respondents Rating of Factors Affecting Involvement in Non-FarmActivities in Abia State

S/N	Factors Determining Involvement in Non-farm Activities (N = 120)	Abia State $\sum FX$	Rating $\bar{X}$	Grand mean
1.	Access to credit facilities	289	2.41	
2.	Household Size	343	2.86	
3.	Profitability of non-farm activities	332	2.77	
4.	Fear of crop failure	316	2.63	2.6
5.	Economic depression	347	2.89	
6.	Availability of information on how to start	258	2.15	
7.	Poor farm income	306	2.55	
8.	Declining farm productivity	285	2.38	

Source: Computed from Field Survey Data, 2017

Table- 2: Multiple Regression of the Effects of the Variables that Determine Engagement in Non-Farm Activities

Variables	Linear	Exponential+	Double	Semi-log
Constant	568190.761 (2.645)***	12.650 (35.278)***	12.147 (12.481)***	231626.722 (0.398)
Access to credit facilities (X_1)	-7120.257 (-0.229)	-0.007 (-0.137)	0.023 (0.200)	8673.829 (0.126)
Information on how to start (X_2)	15351.683 (0.500)	0.059 (1.159)	0.108 (1.007)	93560.361 (1.462)
Economic depression (X_3)	-115499.398 (-4.091)***	0.160 (3.391)***	0.080 (0.745)	5867.096 (0.091)
Household size (X_4)	36944.270 (1.299)	0.108 (2.271)**	-0.316 (-3.279)***	-233066.572 (-4.036)***
Profitability of non-farm activity (X_5)	-51887.781 (-1.797)*	-0.083 (-1.732)*	0.214 (2.179)**	76028.142 (0.197)
Poor farm income (X_6)	-81.416 (-0.021)	-0.001 (-0.086)	0.027 (0.099)	3408.972 (0.021)
Declining farm productivity (X_7)	13961.946 (1.224)	0.025 (1.317)	0.113 (0.937)	72206.936 (1.003)
Fear of crop failure (X_8)	53425.156 (2.173)**	0.081 (1.976)**	0.310 (3.044)***	182844.476 (2.994)***
R^2	0.105	0.099	0.111	0.123
Adj. R^2	0.74	0.068	0.080	0.092
F. ratio	3.385***	3.165***	3.559***	4.004***

Ho: rejected @ 5% level
Source: Field Survey, 2017
***Significant at 1%, **Significant at 5%, *Significant at 10%, + = Lead equation. Figures in parenthesis are t-ratios.

Table-1 shows the factors that determine rural households' engagement in non-farm activities. The result indicates that the engagement of rural farm households' in non-farm activities result more from the factors considered in the study. This can be seen in the grand mean of 2.60. The results further revealed that household size had the greatest influence on engagement in non-farm activities with a mean of 2.86. Profitability of non-farm income non-farm activities followed with a mean of 2.77 It was also observed that fear of crop failure came next with mean of 2.63, and was followed by economic depression with mean of 2.89 . It could be also observed from the result that, poor farm income was a factor leading to engagement in non-farm activities, with mean of 2.55.

The findings in Table 1 further revealed that out of the eight factors considered in the study, five factors -household size, profitability of non-farm activities, fear of crop failure, economic depression and poor farm income were rated high above the benchmark mean of 2.50.

Table-2 shows the multiple regression – relative effects of the variables that determine engagement in non-farm activities. The exponential functional form was chosen as lead equation based on the number of significant variables and the conformity to a-priori expectation. The co-efficient of multiple determination (R^2) value of 0.099 implies that 9.9% of the level of variations in the extent of engagement in non-farm activities by rural households was due to the changes in the specified explanatory variables included in the model.

The analysis as shown in Table 2 further indicates that coefficients of economic recession is 0.099 and positively correlated with the extent of engagement in non-farm activities and was significant at 1%, while profitability of non – farm activities was positively related to extent of engagement in non-farm activities but significant at 10% level . This implies that, the higher the economic recession, the higher the extent of engagement in non-farm activities and the lower the profitability of non-farm activities, the lower the extent of engagement in non-farm activities after controlling for other independent variables. This could be explained by the fact that economic recession and profitability of non-farm activities influence extent of engagement in non-farm activities. Moreover, during economic recession, people prioritize their needs, with the most important (food and shelter) attracting more expenditure. Hence, farm activities would generate more income than non-farm activities, which would receive less patronage during recession.

The result further shows that, the coefficient for household size (0.108) and fear of crop failure (0.081) were positive and significant at 5%. This implies that, for every one unit increase in household size, the extent of engagement in non-farm activities increases by 10.8%, and for every increase in crop failure, the extent of engagement in non-farm activities increases by 8.1%.

The findings are in line with the a-priori-expectation of the study. Furthermore, it lends credence to the previous findings in Table 1, which shows that respondents agreed that five out of the eight factors considered in the study accounted for increased engagement in non-farm activities. Economic depression, profitability of non-farm activities, household size, and fear of crop failure were the most important factors influencing engagement in non-farm activities.

The findings of the study that, household size, profitability of non-farm activities, poor farm income, risk of crop failure, and economic recession encourage engagement of rural households in non-farm activities are supported by the findings of Fitsum (2010), Whiteside (2000), and Anderson (2002), who made similar findings. Still in support of the findings of the study, Tania (2013) opined that, when opting to undertake non-farm activities, rural farm households might be motivated by pull factors, such as profitability in the non-farm activities relative to the farm activities; and push factors, which include, in particular, poor farm income, and associated risks of farming.

The F-value of 3.165 was significant at 1% and thus, the null hypothesis that states that, the factors that determine engagement in non-farm activities do not significantly influence non-farm activities was rejected, while the alternative hypothesis was accepted. By implication, extent of engagement of rural farm households in non-farm activities is dependent upon the factors considered in the study. In this regard, Reardon (ND) observed that, the rural farm households try to overcome economic recession by participating in non-farm activities is imperative. This explains the facts that, there are factors that motivate the rural households to engage more in non-farm activities, and that necessary policies and programmes could be used to improve such activities. This would require investments in new non-farm sector opportunities in resource-poor zones. Such investments will need to be in the general skill and infrastructure development necessary to establish commerce and small - to medium-scale manufacturing and, in market and technology information centres in rural areas for the purpose of identifying potential opportunities as well as help strengthen agricultural linkages in areas poorly served by infrastructure. This public investment would allow the poorer hinterlands to benefit from and participate in the growth.

Reardon (ND) further revealed that extent of engagement in non-farm activities by resource-poor households with poor agricultural potential could be influenced by lack of assets for market development (such as good roads, skilled workforce, and economical sources of raw materials) and low purchasing power, which limit the potential for non-farm sector development.

CONCLUSION

The undesirable effect of recent economic recession in Nigeria resulted to rural households engaging in multiple income generating-activities. It is, therefore, the conclusion of this study that, the variation in the extent of engagement of rural households in non-farm activities during economic hardship was influenced by the factors examined in the study.

RECOMMENDATIONS

The study recommended that**, s**ince non-farm activity is a means of diversification of income sources, engagement in non-farm sources of income in rural areas should be encouraged through entrepreneurial skills training, capacity building, and infrastructural development, and thus check possible effects of factors on non-farm activities. This does not negate enhancement of extension to boost food production.

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