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Factors Influencing Rural Livelihood Diversification: Implications for Poverty Reduction

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Abstract

In Nigeria, agriculture is the principal source of food and livelihood for many rural households making it a central component of programs that seek to reduce poverty and attain food security. Since the sector is faced with many challenges, rural households are compelled to develop strategies through diversification to cope with increasing vulnerability associated with agricultural production. A study to investigate the factors influencing rural farmers livelihood diversification was conducted in Abak, Akwa Ibom state, Nigeria. A total of 150 rural farmers were selected using the multi-stage sampling technique. With the aid of questionnaire, primary data were obtained from the farmers. Data were analyzed using the Tobit regression model. Result of analysis indicated that the most critical factors influencing rural livelihood diversification were household size, farm income, farming experience, membership in farmers association, non-farm income, asset base of household and farmers access to credit. Policies to encourage farmers to access credit and belong to associations were likely to enhance the drive for diversification.

Keywords

Diversification, Factors, Livelihood, Poverty

1. Introduction

Although farming in Nigeria has advanced in the past few years, most rural families are still farming at subsistence level (Edet and Etim, 2014). Agriculture is the largest employer of labour and most poor people depend heavily on it for their livelihood as it is the only way out of poverty and food security. According to World Bank (2008), the growth and development of agricultural sector is the pathway to ensuring food security in sub-saharan Africa. The level of poverty in developing economies is a serious threat to agricultural development. FAO et al (2014), Guatam and Andersen (2016) reported that farmers in the rural economies of most developing countries comprise two thirds of the world's poor population.

Nigeria is one of the most resource - endowed nations in the world but is rated among the poorest globally (Etim and Patrick, 2010; Etim and Edet, 2014). Poverty is especially severe in rural areas where about 8- percent of the populace are living below poverty line. The high level of poverty in the rural communities developing economies, have propelled many households into diverse portfolios in order to cope with risk and shocks associated with agricultural production and circumvent them from producing below the subsistence threshold and improve their quality of life. According to Barrett et al (2001a); Liu et al (2008), Babatunde and Qaim (2010); Bezu et al (2012) and Hoang et al (2014), diversification to non-farm livelihood strategies instead of depending on subsistence farming alone allows families to improve financial status and increase production and cope with environmental stress and shock. Pingali and Rosegrant (1995) also posited that livelihood diversification is an essential strategy employed to move from subsistence and poverty to commercial and prosperity respectively. Livelihood diversification has received much attention from researchers and policy makers in the past decades, with high hopes that promoting it can offer a pathway for poverty

reduction and economic growth in sub- Saharan Africa (SSA) (World Bank, 2007; Loison, 2015) Many studies have been conducted on diversification. Babatunde and Qaim (2009) employed the Probit and Tobit model in studying the livelihood strategy of 220 households in Nigeria to estimate determinants of participation and amount of earning respectively. Block and Webb (2001) also studied livelihood diversification in post-famine in Ethiopia by defining diversification as activities other than cropping. In this study, they grouped all activities like livestock rearing and non-farm activities at once, as diversification. A study conducted in Kenya by Mathenge and Tschirley (2010) found a positive significant coefficient on long term lower rainfall in determining participation and amount of earning. They also found relationship between short-term rainfall stocks with an increase in remittance and agriculture wage. Lanjouw and Shariff (2002) reported a negative relationship between larger landholding and participation in India. They also observed that education increased the amount of off-farm earning in different countries (Ellis, 1999; Gebre Egziabher, 2000 and Davis, 2008). According to Sisay (2010), off-farming activities have also an impact on the level of poverty and income inequality and where the poor have equal access to participate in high earnings off-farm activity its impact to poverty reduction and income in equality will be significant. In Nigeria, agriculture is the principal source of food and livelihood for many rural households making it a central component of programs that seek to reduce poverty and attain food security (Etim and Edet, 2014). The problems faced by rural farmers have constrained their ability to increase their cultivable areas and has adversely affected their living standards. According to Loison (2015), the already diminishing farm sizes coupled with the high population growth has a potentially negative impact on rural welfare and food security. Although food production is characterized by the use of crude implements and local farming techniques, more than 80 percent of food is produced by rural farmers (Chauvin et al 2012; Akaakohol and Aye, 2014). The constraints faced by these farmers in achieving food security through efficient use of resources have further worsen their living conditions. This however manifest in poverty and places household welfare at a greater risk. Consequently, this risk has propelled rural farmers to diversity in order to supplement and argument family income and food supply. In sub-Saharan Africa, many rural smallholder farmers have increasingly diversified their livelihood through non-farm activities and migration (Barrett et al 2011; Reardon, 1997; Losch et al 2012). But despite the involvement of households in different portfolios, their living condition are still low and have remained unabated spite various policy interventions undertaken by stakeholders. Whether diversification will provide impetus for improving standards of living in sub-saharan Africa is still a subject of much debate (Loison, 2015). To formulate policies and develop programmes aimed at creating enabling environment for these portfolios to thrive and for households to cope, an understanding and study of specific factors that influence diversification is required. According to Losch et al (2013), these diversified livelihoods are facilitated by infrastructural development, emergence of rural towns and improving accessibility to urban areas. This study was therefore conducted to estimate the factors influencing rural livelihood diversification into non-farm activities.

2. Methodology

The study was conducted in Abak Local Government Area of Akwa Ibom State, Nigeria. Abak is bounded to the North by Ikono, North West by Essien Udim, West by Etim Ekpo and Ukanafun Local Government Areas, South by Oruk Anam and to the East by Uyo Local Government Area. It has an estimated population of 139,090 people comprising 73,578 males and 65,512 females (National Population Commission, 2006). The major economic activities of the people of this area pre and post the Nigerian civil war was palm produce exported through river port at Ekpene Okpo, Ntak Ibesit, a distance of about 8km from Abak town. The settlement pattern is dense and the area is in the rainforest belt of the country with 2 seasons – the short dry season and rainy season. Abak comprises five clans viz: Abak urban, Midim, Ediene, Afaha obong and Otoro. Multistage sampling procedure was employed to select the representative households for this study. First, 3 out of the 5 clans were randomly selected. Secondly, 10 villages were selected randomly to make 30. Thirdly, 5 households were selected per village to make a total of 150 households. Primary data were obtained with the aid of questionnaire and oral interview.

Analytical Technique

The determinants of diversification were estimated using the Tobit regression model due to its simplicity and wide application by recent related empirical studies. The Tobit model according to Greene (2003) employed is of the form.

$$Y_i^* = X_i\beta\ e_i$$

Where e_i is normally distributed with zero mean and constant variance. Y^* = livelihood diversification index.

It is obtained using the herfindhal index (Farm income/Total income)^2.

Diversification index = 1 – herfindhal index. The value of the diversification index ranges between zero and one. The model is explicitly stated as

$$Y = \propto_o + \propto_1, AGE + \propto_2 MAR + \propto_3 EDU + \propto_4 GEN + \propto_5 SOC + \propto_6 ACR + \propto_7 FMS + \propto_8 HHS + \propto_9 FEX + \propto_{10} ABH + \propto_{11} FIN + \propto_{12} HEX + \propto_{13} NFI + \propto_{14} EXT + \varepsilon$$

Where

AGE = Age of household head (in years)

MAR = Marital status of household head (married = 1, otherwise = 0)

EDU = Years of formal education

GEN = Gender of household head (Male = 1, Female = 0)

SOC = Membership in social organization (in years)

ACR = Access to credit facility by the household head (yes

= 1, no = 0)

FMS = Farm size of household (hectares)

HHS = Household size (number of household members who share the same meal and dwelling)

FEX = Farming experience of the household head (in years)

ABH = Asset base of household (in naira)

FIN = Farm income (in naira)

HEX = Household expenditure (average household consumption)

(expenditure per adult equivalent)

NFI = Non-farm income (in naira)

EXT = Access to agricultural extension services (frequency of contact)

β = Regression parameters or coefficient

ε = Error term.

3. Results and Discussion

Socio-economic attributes of farmers

Figure 1 revealed that there were more women farmers (51.82 percent) than men (48.18 percent). The dominance of women in farming in the study area could be attributed to the fact that most men of active age drift to urban area in search for greener pastures.

The result on age of farmers revealed that the average age of respondents was 43.6 years. This implies that farmers where within the active working age. About 58.2 percent were above 40 years of age whereas 41.8 percent were below 40 years of age.

Figure 2 shows that majority of the farmers were married (58.20 percent) and 26.40 percent were single. Widowed farmers constituted 13.60 percent and divorcees constituted the least proportion of farmers (1.80 percent).

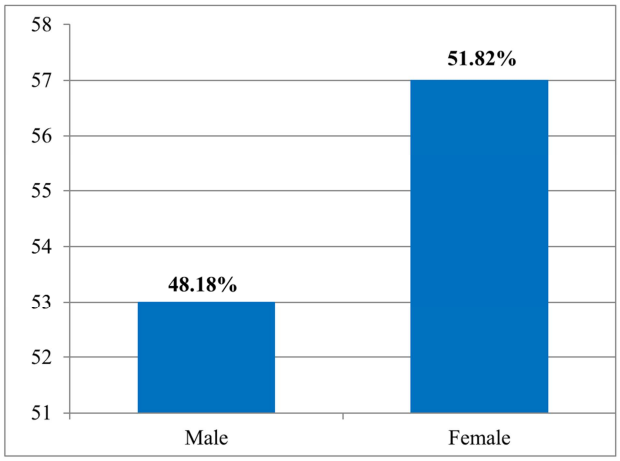

Figure 1. *Sex of farmers.*

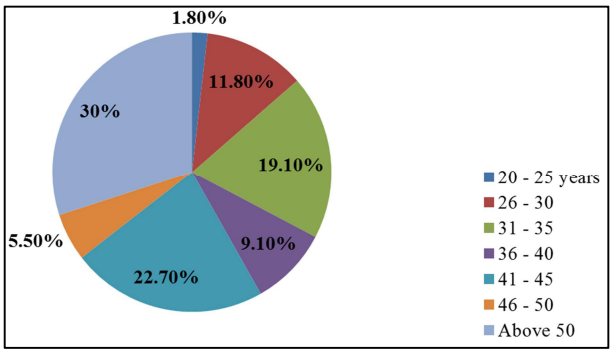

Figure 2. *Age of the farmer.*

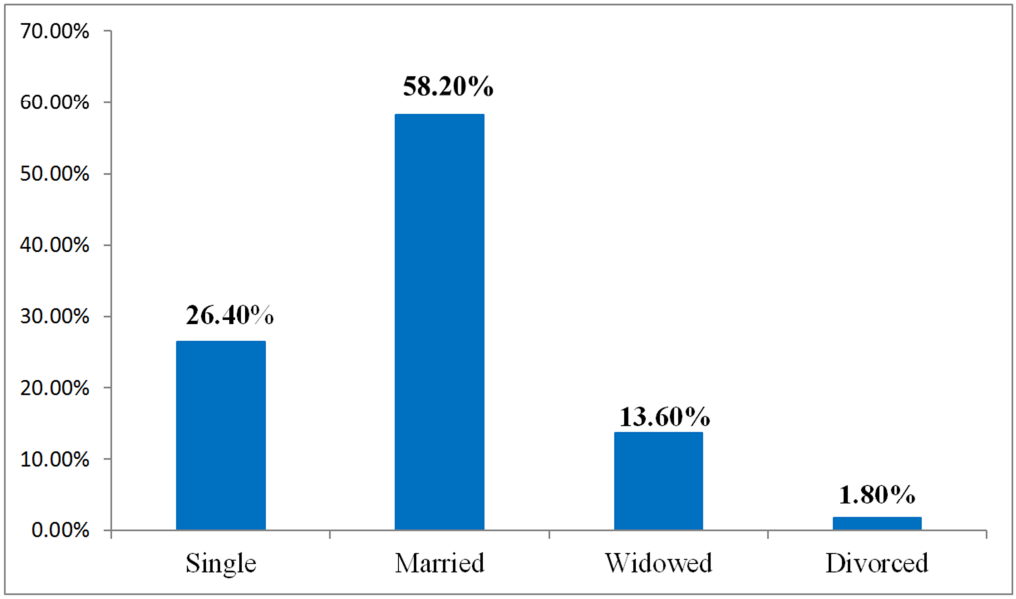

Figure 3. *Marital status of farmers.*

The result on household size of farmer is revealed in figure 4. Majority of farmers (50 percent) had few children (1-5 children), 49.10 percent had 6-10 children whereas less than 1 percent had more than 10 children. The average household size was 5. The large family size implies that the required labour for agricultural production was readily available, pressure was nonetheless exerted on household consumption.

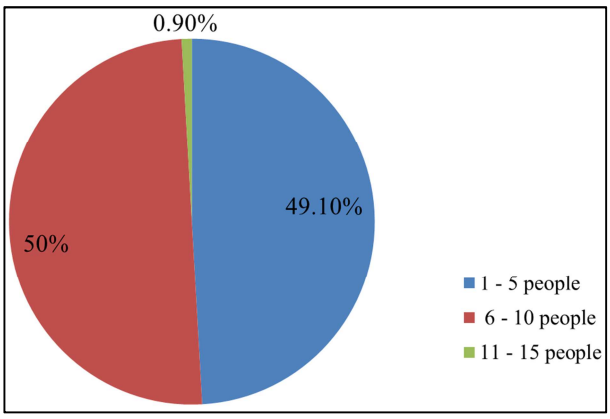

Figure 4. *Household size of farmers.*

The majority of the household heads 82.80 percent had post secondary education whereas 15.40 percent had primary education. The challenge of farmers with no formal education is gradually diminishing over the past years as access to education is improving significantly in remote areas as evidenced by only 1.80 percent of farmers having no formal education. Most heads of households are elderly but the youths are educated and have better access to education. But the challenge faced in the rural communities is that the young people who should provide the labour for agriculture have migrated to cities in search of formal employment since agriculture is seen as a dirty job (Musemwa et al 2007 and Musemwa et al 2013).

Figures 6 and 7 shows the income naira ~~(N)~~ from farming and non farming activities. Majority of farmers in figure 6, (45.55 percent earned less than 10,000.00 monthly whereas 39.09 percent earned between 10,000.00 – 20,000.00 monthly. About 12.82 percent of the farmers earned between 25,000 – 35,000 monthly.

In Figure 7, most of the farmers (62.99 percent who engaged in non-farming activities earned about between 1,000 – 6,000 monthly. Findings imply that more income was earned from non-farming than farming activities.

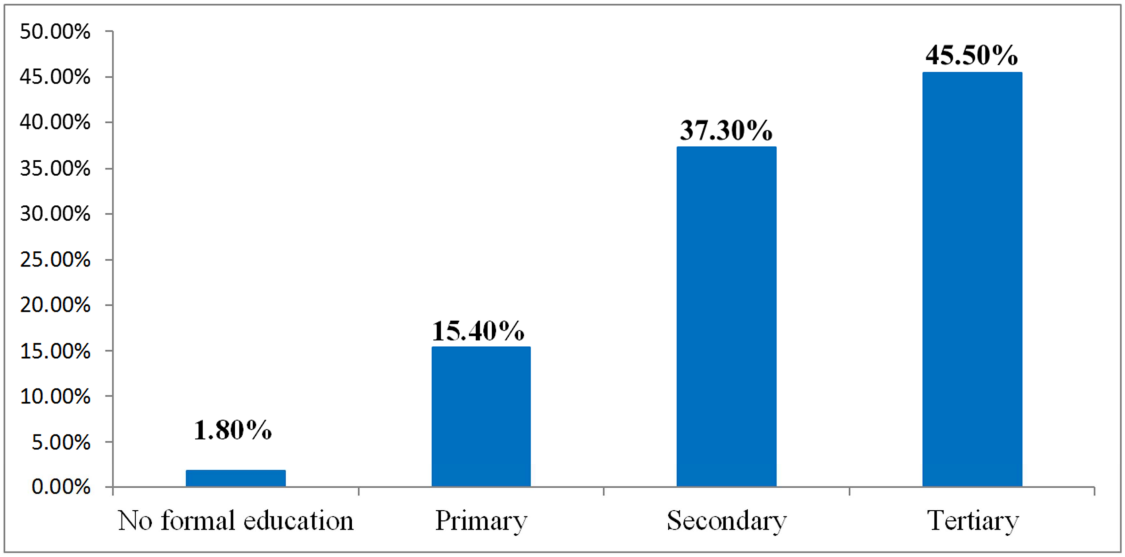

Figure 5. *Educational Level of Farmers.*

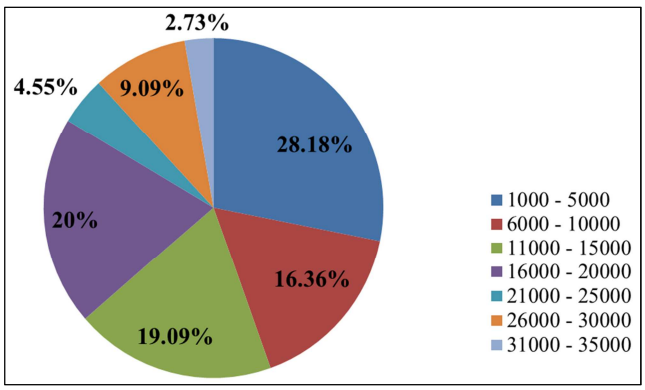

Figure 6. *Income from Farming.*

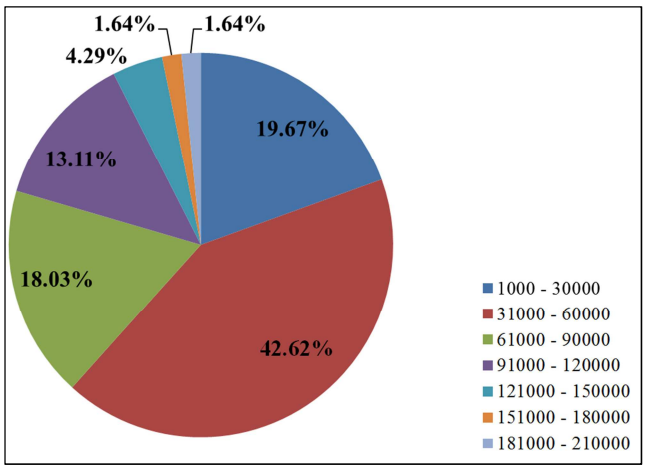

Figure 7. *Income from Non-Income Farming.*

Table 1. *Non Farming Activities.*

Non Farming Activities	Frequency	Percentage
Civil Service	55	36.67
Trading	63	42
Okada/Taxi Driving	12	8
Tailoring	3	2
Food vending	2	1.33
Welding	5	3.33
Oil Palm processing	10	6.67
Total	150	100.00

Table 1 shows the different non farming activities engaged by farmers in the study area. Most of the farmers (42 percent) were traders, followed by 36.67 percent who were civil servants. About 8 percent, 2 percent, 1.33 percent 3.33 percent and 6.67 percent were okada/tax drivers, tailors, food vendors, welders and oil palm processors respectively.

Factors Influencing Livelihood Diversification

Table 2 reveals the Tobit model estimate results. The variable household size is positively significant ($p<0.01$). This means that as household size increases, diversification of livelihood tends to increase and reduces poverty. The probability of having greater number of family members in a household increases the decision of an individual to allocate labour into off-farming activities. This is because when there is more labour power, household members are encouraged to participate in non-farming activities thereby earning more income. Result is synonymous with earlier empirical findings by Sisay 2010) (who reported a positive impact of household size on individual decision to engage in non-farming activities. The coefficient of farm size is negative and significant ($p<0.05$). Implying that as farm size increases, diversification to non-farming activities tends to decrease. This is because larger farms are seldom associated with specialization in agriculture.

The variable farm income has a coefficient of 6.9964 e-06 and negatively significant ($p<0.01$) suggesting that the higher the income from farming activities, the lesser the involvement in diversification of livelihood.

Farming experience is negative and significant ($P<0.05$) indicating that as farmers acquire more years of experience in farming, the lesser their likelihood to diversify into non-farming activities. This is because farming experience increases the value of farm work relative to the marginal value of off-farm work. Thus, the participation of farm households are expected to diminish (Beyene, 2008). Similar empirical results were obtained by Akaakohol and Aye (2004) in their study of diversification and household welfare in Nigeria. On the contrary, experience increases with age, consequently, experienced persons have mere prospects of being engaged in the non-farm sector. The variable membership in farmers association is negatively significant ($p<0.01$). This implies that farmers who belong to farmers associations are less likely to diversify into non-farming activities. The variable, non farm income is positive and significant ($p<0.01$). This suggests that as income from non-farming activities increases, the likelihood of diversity in income sources increases.

The coefficient of asset base of household is positively significant ($p<0.05$) suggesting that as the asset base of household increases, the likelihood of diversifying into different income sources is likely to increase. The variable access to credit is also positive and significant ($p<0.05$). This means that the more household access credit facilities, the more the capital available for off – farm investment and the higher income generated by the farm household is likely to increase consumption patterns and consequently reduce poverty. This implies that farmers who diversify are more likely to earn more income at the end of the production season and therefore spend more on consumption.

Table 2. *Tobit estimates of the determinants of livelihood diversification.*

Variables	Coefficient	Standard error	t-value
Const	0.918141	0.0448383	20.4767***
MAR	0.000280155	0.0185847	0.0151
AGE	−0.00013842	0.000768003	−0.1802
HHS	0.000362861	0.00010862	3.34064***
EDU	0.00242497	0.00158315	1.5317
FMS	-0.0421709	0.0200773	-2.1004**
FIN	−6.9964e-06	6.86824e-07	−10.1866***
FEX	−0.00049838	0.000212889	−2.34103**
SOC	-0.0141562	0.0017942	-7.88998***
GEN	−0.00180735	0.0128591	−0.1405
NFI	6.84104e-07	1.74637e-07	3.9173***
ABH	7.78655e-09	3.61334e-09	2.1549**
HEX	1.7787e-07	1.47908e-07	1.2026
ACR	0.0375748	0.0189183	1.9862**
EXT	−0.00279103	0.00782454	−0.3567
Diagnostic Statistics			
Chi-square (14)	246.2463	p-value	1.72e-44
Log-likelihood	104.8445	Akaike criterion	−177.6890
Schwarz criterion	−143.6548	Hannan-Quinn	−164.3263

Note: ***, ** and * denotes that the associated coefficient is significant at 1%, 5% and 10%, respectively

4. Conclusion

It is uncommon to see rural households engage in different income generating activities as coping strategy for the current economic crisis. But their engagement in various income activities is affected by factors. The study analyzed the factors influencing rural livelihood diversification in Akwa Ibom State. Finding revealed that the most important factors affecting diversification of livelihood by rural households estimated in the study were household size, farm income, farming experience, membership of associations, non-farm income, assets base of households and access to credit. Policies that reduce impediments to rural diversification and broadens opportunities to increase income should be encouraged.

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