Socio-Economic Determinants of Rural Non-Farm Households Income Diversification in Southeast Nigeria

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Abstract

The pervading rate of rural poverty in South-East Nigeria has become a source of concern to many rural households and non - farm income diversification options seem not to be well documented. The study therefore analyzed the socioeconomic determinants of rural non –farm households' income diversification in South – East Nigeria. A combination of purposive and multi-stage random sampling techniques were adopted in the collection of data from three hundred and sixty (360) rural farm households using structured questionnaire administered as interview schedule. Both descriptive and inferential statistics were employed to realise the objectives of the study. The result of the analysis showed that majority of the rural farm households whose mean age was 51 years (76.1%) with an average household size of 8 persons. Though, majority of the household heads completed primary school education, they earned an average annual income of five hundred and one thousand naira (N501,000) which two hundred and fifty thousand, three hundred and forty-seven naira (N250,347) came from diversified non-farm activities. The study revealed that 82.5% of the farm households diversified their income, 17.5% solely depended on income from farming activities. The identified factors influencing rural households' diversification portfolio included poor returns to agricultural activities, small farm size, risk and uncertainties that characterized agriculture, membership of social organizations, poor household earnings from farming, limited access to credit facilities and profit motive. With the coefficient of multiple determinations (R2) of 0.657.The study recommended that government should increase adult learning education outreach centres in the rural areas in order to eradicate the low level of education among rural people in the study area. It was also recommended that skill acquisition centres should be adequately provided through the private-public partnership development scheme to reduce the high level of unskilled labour available in the area.

Keywords: Socioeconomic, rural, non-farm income, households, diversification.
JEL Classification: D31, D33, Z13

1. Introduction

One of the most established characteristics of rural households in developing countries is that they can obtain their incomes from different sources (Davis, Winters, Carletto, Coarrubias, Quinones, Zezza, Stamoulis, Azzarri, and DiGiuseppe*, 2010*). Household income diversification is the norm in rural societies and owing to the risks and uncertainties that characterise agriculture, attention of most farming households in developing countries is gradually shifting to non-farm activities. In Nigeria for instance, the rural economy is characterised by two major activities: farm and non-farm economic activities (Alimba, 1995). In the rural economy, off-farm economic activities are gaining prominence as integral components of their livelihood economies (Haggblade, Hazell, and Reardon, 2007). The off-farm economic activities which are common in rural Nigeria as observed by Alimba (1995) are petty trading (food stuff sales, fruit sales, provision sales etc), dress making, palm wine tapping, craft making (wood and calabash carving, carpentry, pot making, leather works and weaving), welding, hair salons, and auto repairs etc. These off-farm activities provide employment options outside the farm, reduce rural urban migration, promote income distribution and diversification and inter -sectoral linkages capable of leading to a vibrant rural economy. These activities enable the farmers handle the problems arising from seasonality of agricultural production as it concerns labour, output and income (Nwaru, 2005).

Diversification in off-farm activities have become an important component of livelihood strategies among farm households in most developing countries. Studies have reported a substantial and increasing share of off-farm income in total household income (Haggblade, Hazell, and Reardon, 2007). Diversification of income can result when farming becomes less profitable and more risky as a result of population growth and crop and market failures, thus leading to "distress-push" diversification. To this effect, Ellis (1998) inferred that rural farming households have been found to diversify their income sources thus, allowing them to spread risk and smoothen consumption. This is often necessary in agriculture-based peasant economies because of risk such as variability in soil quality, pests and diseases, price shock, unpredictable rainfall and other weather related events which lead to low productivity, low output and invariably low income which continually trap them in the viscous cycle of poverty.

In other cases, however, households are rather pulled into the off-farm sector, especially when returns to off-farm employment are higher or less risky than in agriculture, resulting in "demand-pull" diversification. Similarly, Schwarze and Zeller (2005) posited that households diversify because returns to their assets endowed in agricultural production decrease in relation to the returns from using them in activities outside agriculture. This implies that the ability to diversify highly depends on the admission to the different types of assets, for example physical, human, and social capital. It also explains why not all households have the same opportunities to participate in non-farm activities. There is a strong link between non-farm income share and total household income. Poorer households tend to have less access to non-farm activities than better-off households (Babatunde and Qaim, 2008).

Non-farm income activities include all economic activities in rural areas except agriculture, livestock, fishing and hunting. It includes activities like processing, marketing, manufacturing, wage and casual local employment in the rural villages. Several authors suggest that the highly diverse and heterogeneous rural non-farm sector offers opportunity for the poor as well as the rich. Poor households frequently seek economic refuge through distress diversification into low skill non-farm employment such as basket making, pottery, small scale retailing and seasonal labour migration (Reardon *et al.*, 2007). On the other hand, the rich engage in more sophisticated, profitable, high investment activities such as transportation, processing, contracting and manufacturing (Barret *et al.*, 2001).

However, different studies have reported an increasing share of nonfarm income in total household income (Haggblade *et al.*, 2007). But despite these findings, there seems to exist no empirical studies on the socioeconomic determinants of rural non-farm households' income diversification in Southeast, Nigeria, hence the need for this study. To address these problems, the

study described the socio-economic characteristics of farm households in Southeast Nigeria; determined the effects of selected socioeconomic characteristics of rural households on non-farm income diversification; and analyzed the factors that influence farm households' participation in different non-farm activities in the area.

2. Methodology

The study area is South-East, Nigeria. The area is comprised of five States, namely; Ebonyi, Enugu, Anambra, Imo, and Abia. The people of the area are mainly of Igbo extraction. According to National Population Census (2006), Southeast Nigeria has a total population of 16.4 million people. With an approximated landmass of 58,214.7 square kilometres, the area lies between longitude $6^0 50^I$ and $8^0 30^I$ E latitude $4^0 30^I$ and $7^0 5^I$ N. South-East Nigeria is bordered in the east by Cross-River State, in the west by Delta and River States, in the north by Benue and Kogi States, and in the south by Akwa-Ibom State. Lying within the rainforest and derived savannah regions of the country, South-East Nigeria is characterised by two major seasons: the rainy season which last from April to October with July and September as peaks, and the dry season that starts from November and lasts till March. Atmospheric temperature in the area varies from 18^0C to 34^0C within the year. The people of the area are predominantly smallholder farmers growing mainly arable crops like; yam, cassava, maize rice, cocoyam, potato, and few plantation crops like palm tree and cashew. Apart from being agriculturally endowed, the people are into trade and commerce.

A combination of multistage and purposive sampling techniques were employed in the selection of respondents in the study area. The choice of purposive sampling technique was to select States that are more agrarian and to avoid picking States that are contiguous to each other. Three states of Abia, Anambra and Ebonyi were purposively selected from the five states of South – east, Nigeria. Furthermore, three agricultural zones from the earlier selected states were purposively selected to give a total of nine (9) agricultural zones. From the nine (9) agricultural zones that were selected, two extension blocks were randomly selected to give a total of 18 Blocks. From each of the randomly selected eighteen (18) extension blocks, two (2) circles were randomly selected to give a total of thirty (36) circles. From the randomly selected 36 circles, ten (10) farming households each were randomly selected. Thus, a total of three hundred and sixty (360) farming households were used as the sample size for the study. Meanwhile, the sample frame was determined from ADP list of all the registered farming households in the States that were sampled. Primary data were collected primarily using structured questionnaire administered as interview schedule to each of the households.

Both descriptive and inferential statistics were employed to analyse the objectives of the study. Specifically, objective (i) was analysed using descriptive statistics. Objective (ii) was analysed using multiple regression analysis while objective (iii) was analysed using principal component factor analysis following Kaiser normalization.

Model Specification

The model is explicitly express as:

$$Di = \beta0 + \beta_1 AG + \beta_2 GEN + \beta_3 MS + \beta_4 ED + \beta_5 HHS + \beta_6 TAI + \beta_7 FEP + ET$$

Where:
Di = Non-farm income (total income obtained from participating in non-farm activities)
AG = Age of household head (years)
GEN = Gender of household head
MS = Marital status of household head
ED = Level of education (Number of years spent in formal education)
HHS = Number of persons of feeding from the same pot

TAI = Total annual income of the household head
FEP = Farming experience of household head (years)
$\beta 1 - \beta 7$ = Coefficient of estimates
ET = Stochastic error term

Factor Analysis

Principal Component Analysis (PCA) or factor loading was used to analyse the factors that influence farm households' participation in non-farm activities in the area. The Principal Component Analysis is built on the assumption that:

a) The error terms e_i are independent of one another, such that $E(e_i) = 0$, and $Var(e_i) = \delta_i^2$. Hence, each e_i is an outcome of a random draw with replacement from a population of e_i values having mean of 0 and certain variance, δ_i^2

b) The observable factors, F_j are independent of one another and the error terms, and such that $E(F_j) = 0$ and $Var(F_j) = 1$. Therefore, each observable variable or factor Y_i is linear function of independent factors, F_i and error terms, e_i.

Using the assumptions of PCA, factor isolated was based on Kaiser's rule of thumb. Kaiser developed a rule of thumb of 0.4 variable value as a minimum loading weight for isolating a factor as being positive to the attribute in question.

Factor analysis can then be expressed mathematically as:

$$Y_i = \beta_{io} + \beta_{i1}F_1 + \beta_{i2}F_2 + \beta_{i3}F_3 + \ldots + \beta_{in}F_n + e_i \qquad\qquad 6$$

Where,
β_i = parameters or loadings. Hence, $\beta_1 - \beta_n$ is the loading of variable Y_i on factors, F_n.

3. Results and Discussion

This section presents the analysis, results and discussions of data generated from the three hundred and sixty (360) farm households based on the specific objectives.

Socio-Economic Characteristics of Rural Farm Households

The socioeconomic variables analysed and discussed are: age, gender, household size, farm size, annual household income, and educational status of the households (Table 1). The result showed that age in some situations could be a determinant entry factor for some livelihood activities and employment (Gordon and Graig, 2001). From the findings, the mean age of rural household heads in South-East, Nigeria is 51 years. This finding is justified as young people are more likely to migrate in search of non-farm income opportunities in near or distant towns or urban cities than older people. The findings is contradiction with Odii and Nwosu (1996) who reported mean age of 45 years and Nwaru and Ekumankama (2002) who reported mean ages of 42 and 49 years for men and women crop farmers respectively.

Gender is an important factor in the ability to access income earning opportunities and the impact of development intervention. Different attitude of men and women to risk is likely to influence the choices they make in taking up diverse income earning activities. Analysis of the gender of rural farm households revealed that they were more male headed (76.1%) than female headed (23.9 %) households. This finding is attributed to the fact that the incidence of separation and divorce is low in the zone. This finding was in conformity with Ellis (1998) who argued that given the social subordination of women in most peasant societies, and their key role in household in the subsistence and reproduction of the household, it seems plausible that they might take a different view of risky actions than men. In many, but not all, circumstances women have good reason to defend the

subsistence basis of family survival while men often stand to make personal gains from activities, which generate cash over which they have spending power.

Household size can have significant influence on household income if it has most of its members working as either on-farm or non-farm activities. According to Bryceson (2000), Lanjouw (1999) large household is likely to have more diversified income sources if it has some or all of its members working and contributing to household income. Analysis of the household size of rural farm households in south-east, Nigeria showed a mean household size of 8 persons. This depicts large household size whose energy and resource can be used to improve household income. However, this finding corroborated Ezike (1999) who reported that the family size of farmers in South-East Zone of Nigeria was 8. It equally agrees with earlier findings of Odoh, Nwibo and Odom (2009) who reported a household size of 8 persons for small holder cassava farmers in Afikpo North Local Government Area. It is generally believed that large household size is an advantage in the farming households in terms of its effect on house hold labour force. This is also consistent with Ojemade, Edeh and Onemolease (2008) who inferred that agricultural production activities are labour intensive and large household can provide family labour at least cost.

The size of farmer's farm has a potential to increase their farm output and the income analysis of farmers farm size in south east Nigeria has shown a mean of 4.89 ha. The farm size is relatively large at farm level as it is far above the national average of two hectares. Thus, it ran contrary to the findings of Fabusoro *et al.* (2010) who reported that about 90 % of Nigeria's food is produced by small scale farmers who cultivate small plots of land of 0.1-2.0 hectares with crude implements and depend on rainfall rather than irrigation system.

Annual income is sub-divided into income from farm and income from diversified activities and other sources. From the analysis of the total annual income of the rural households, an annual average income of ₦501,000 was obtained. Individual analysis of the income range revealed that 56.4 % of the farm households earned between ₦100,000.00 – ₦ 500,000.00 annually, also 28.9 % of them earned ₦500,000 - ₦1,000,000.00 annually. Only about 6.9 % earned over a million naira annually. However, analysis showed a mean annual income of ₦260,653 from farming. It further reveals that about 67.2 % earned ₦100,000 – ₦ 500,000.00 annually from farming and none of the households earned above 1 ₦ million from farming only. However, further analysis revealed that as a result of diversification an annual diversified income of ₦240,347.00 was made. This diversified income may be attributed to income from younger people in the family who seek non-farm employment in the rural towns or in nearby or distant cities where jobs such as trading, building construction, quarrying, motorcycle and tri-cycle transportation provide immediate employment. Men and women also undertake processing and marketing of farm produce during off-farm seasons. Income diversification among households is therefore a strategy undertaken with the intention of having sources of income throughout the farming and non-farming seasons. Rural people combine a range of activities to make a living since barely any household was found to depend on one activity but used a host of activities and opportunities offered by farm and non-farm sectors.

World Bank (2008) noted that education and skills are often the most valuable resources for rural people to pursue opportunities in modern agriculture, obtain wage employment, start business in the non-farm enterprises and migrate successfully for the high paying urban jobs. Educational attainment by heads of household showed that 35.8 % had only primary education. About 27.2 % completed secondary education, 21.1 % had either Nigerian Certificate in Education or Ordinary National Diploma Certificate while only 9.8 % had first University Degree. However the mean years of formal education of rural farm households were 10 which implied completion of only secondary education. In further justification of importance of education to the household income generation, World Bank (2008) noted that people with higher education are more likely to participate in wider employment opportunities offered by the non-farm and urban sectors. However their inability to attain a higher education may be attributable to financial difficulties and participation in family farm and non-farm work. However, low education attainment in rural villages adversely affects agricultural

production as well as non-farm activities. Education plays an important role in enabling individual to become engaged in non-farm employment, as several non-farm jobs demand a minimal level of education.

Table 1: Percentage Distribution of Respondents According to Socio-Economic Characteristics

Socioeconomic variables	Frequency (n =360)	Percentage	Mean
Age			
26-40	77	21.3	
41-55	169	47.0	51
56-70	99	27.5	
>70	15	4.2	
Gender of Household head			
Male	274	76.1	
Female	86	23.9	
Marital Status			
Single	7	1.9	
Married	332	92.2	
Separated	2	0.6	
Widowed	17	4.7	
Divorced	2	0.6	
Household size			
1-6	155	43.1	
7-12	180	50.0	8
13-18	18	5.0	
19-24	4	1.1	
25-30	3	0.8	
Number of household members living within			
1-6	178	68.5	
7-12	75	28.5	
13-18	5	1.9	
19-24	2	0.8	
Annual Income (N)			
<100,000.00	28	7.8	
100,000-500,000.00	203	56.4	501,000
500,000-1,000,000	104	28.9	
>1,000,000.00	25	6.9	
Annual Farm Income			
<100,000.00	78	21.7	
100,000-500,000.00	242	67.2	260,653
500,000-1,000,000.00	40	11.3	
Educational Status			
No Formal Education	22	6.1	
FSLC	129	35.8	10
SSCE	98	27.2	
NCE/ND	76	21.1	
HND/B.Sc	35	9.8	

Effect of Socioeconomic Characteristics of Farm Households on Non-Farm Income

Diversification

Analysis of the effect of socioeconomic attributes of the farm households on the non-farm income profile as shown in Table 2 showed that socioeconomic characteristics of the farm households have strong effect on their non-farm income. The magnitude to which the explanatory variables explained the dependent variable (Y) was shown by the high R^2 which stood at 0.663. This indicates that about 66 % of the dependent variable – non-farm income was explained by the included explanatory

variables – socioeconomic characteristics. Thus, it clearly shows that the model is strong, reliable and has high predictive ability.

Specifically, the analysis showed that the coefficient of marital status$_{(MS)}$ was positive and statistically significant at 1 % (P<0.01). This implies that the combined efforts of both gender in a household will significantly contribute to the development of non-farm income as both will be seeking alternative means of livelihood to support the family. However, the finding is in line with the finding of Olale, Henson and Cranfield (2010) who inferred that some married couples may want to stay together and, therefore, may prefer undertaking farm work collectively, rather than undertaking separate activities (which may mean staying apart).

The coefficient of educational status was positive and statistically significant at 5 % (P=0.05) level. This implies that farm household with higher educational qualification are more inclined to diversification to boost non farm income. With a marginal effect that is positive at 1 %, it suggested that households with higher education are more likely to seek non-farm employment in rural areas. The marginal effect is 0.118 shows that one additional year of education increases, the probability of non-farm employment by 11.8 percentage points. The finding conformed with the a priori and was not consistent with Oluwatayo (2009) who deduced that farm households with formal education (especially those educated up to tertiary level) are engaged in better and well-paid salaried jobs than those with no formal education hence they have lower likelihood of combining two or more jobs (multiple job holding). This is because education enhances the potential of respondents and makes them grab available opportunities with little or no stress. The result again is not in conformity with the findings of Ibekwe (2001) who individually noted that where the educational status of farm household workers is higher, they are reluctant to work in the farm sector as they have better prospects elsewhere.

The coefficient of household size was positive and statistically significant at 1 % (P=0.01) level of probability. This implies that as farm household increases in number, there will be an increase in their quest to increase their livelihood options to ensure protection against the exigencies of household demand. This finding again conformed to the finding of Oluwatayo (2007) who inferred that small-sized households are less prone to poverty than large-sized households because the income per capita (a measure of wellbeing status) of the former is usually larger than that of the latter. This implies that households that are large, households with no formal education and households that are poor have the likelihood of diversifying their source of household income.

The coefficient for farm size was positive and was statistically insignificant. This implies that increasing farm size tends to reduce the propensity of farm household to diversify as returns from the agricultural sector tend to be sufficient for the farm family. This finding was in tandem with the finding of Liverpool-Tasie (2012) who posited that increase in the farm size of households will expectedly encourage farmers to concentrate on the their farming activities with a view of to increase their farm output and income. Hence, the *a priori* was met.

The coefficient of annual income of the farm households was positive and statistically significant at 10 % (P = 0.10) level. This indicates that increase in farm households' annual income is likely to increase the propensity to diversify in non-farm activities. This finding tends to deviate from the *a priori* expectation as farm households with high income base tend to be comfortable and as such the propensity to diversify may be low.

The result of the analysis further showed that the coefficient of age of household heads was not significant and negatively correlated to the non-farm income diversification. This can be attributed to the fact that the mental and physical energy required for increased farm productivity declines with age. Thus, the finding justifies the earlier report of FAO (1999) that in the rural communities where young people have migrated outside the communities, the possibilities of the diversification of the ageing population is always on the reverse.

Table 2: Coefficient Estimates of Multiple Regression Analysis on the Effect of selected Socioeconomic Characteristics of Rural Households on Non-farm Income

Variables	Parameter	Coefficients	Standard Error	t-value
Constant	β_0	3.200	0.286	11.175*
Age	β_1	-0.003	0.004	-0.765
Gender	β_2	-0.040	0.090	-0.447
Marital Status	β_3	0.774	0.052	14.868*
Educational Status	β_4	0.118	0.009	12.908*
Household Size	β_5	0.182	0.011	17.015*
Annual Income	β_6	1.925E-007	0.000	2.006***
Farm Size	β_7	0.007	0.016	0.485

*P = 0.01(1 %); ***P = 0.10(10 %)
R^2 = 0.663
Adjusted R^2 = 0.657

Factors Influencing Rural Household's Decision on Income Diversification

Rural households face diverse challenges in the quest to increase their productivity, thus leading to non-farm income diversification to supplement income from farming. Using varimax principal component analysis with Kaiser's rule of thumb (minimum point of 0.4), as applied by Nwibo and Okorie (2013). The factors that influenced rural farm households' decision to diversify their income into non-farm activities in South-East Nigeria were investigated. These were found to be poor returns to agricultural activities, small farm size, risk and uncertainties in agriculture, membership of social organizations, poor household earnings from farming, limited access to credit facilities and profit motives. These factors and their factor loadings are discussed under two components; productive and economic factors. The productive factors include poor return in agricultural activities, small farm size, risk and uncertainty in agriculture and membership of social organization while economic factors include; poor household earning from farming, limited access to credit facilities and profit motive.

Productive Component Factors
The identified productive factors that influenced farm households' decision to diversify were based on the highest factor loadings, and they are poor returns on agricultural activities, small farm size, risk and uncertainties that characterize agriculture and membership of social organizations.

Poor Returns on Agricultural Activities:
Poor returns on agriculture (0.815) is one of the push factors earlier discussed in literature that make farmers diversify into non-farm income activities. It has been noted that when the season's income from farming drops to levels not sufficient for survival, households are pushed into non-farm activities to enhance smooth income and consumption inter-seasonally. This inter-seasonal smoothening of income is not necessarily coping with shock, because the shock is not unexpected, but is rather regular. This is necessary since one of the most important features of non-farm activity is that it can provide employment all year round to rural households unlike farming with its seasonal output.

Small farm size
This study has shown that small farm size (0.909) is one of the most important factors that pushed the rural farm households into the rural non-farm income. Conditions such as small land holdings, poor land distribution and population pressure clearly influence household diversification decisions. Over generations, as inherited land holdings fall below the minimum required to support a farm family, small holder farmers face little choice but diversification into non-farm activity. For this reason, growing landlessness in South East Nigeria has triggered strong interest in rural industries as a means of absorbing the access labour force in the presence of declining agricultural land availability. This finding is in conformation with Reardon, Berdegue and Escobar (2001), who reported that in Latin

America, as household landholdings decline, the non-farm share in total household income rises. Furthermore Hossain (2004) also reported that in Bangladesh the share of rural non-farm earnings in total household income in usually highest for the smallest farm sizes. Thus as agricultural land becomes scarce; households must seek compensating earnings in the non-farm economy.

Risk and Uncertainties that characterise Agriculture
Risk and uncertainties in agricultural production with 0.920 loading has been identified by the study to constitute a vital factor that pushes household decision to diversify. Where there is strong variation (risk) in farm income, (for instance rainfall instability) driving households to engage in non-farm activities with lower risk (even if they have low returns) or with returns which do not vary with farming outcomes. Degradation of fragile soils or rangeland, particularly in drought-prone regions, leads to irregular but sharp downturns in farm and livestock production. Moreso, in areas with poor agro-climates and risk, less dynamic agriculture, non-farm activity enable household to moderate risk and cope with periodic severe downturns in agricultural productivity (Barret, Rearden and Webb, 2001).

This findings agrees with Barret *et al*. (2005) in their African Studies which stated that "households are considerably more diversified in the higher risk, driver environment of agro pastoral areas of Kenya than they are in the more humid, higher agricultural potential setting of Ivorian rice systems".

Membership of social organizations
The fourth factor that emerged in the result of the analysis is farmer's household's membership of social organizations with 0.897 loading. Social capital measures the access to social networks and institutions. These include all kinds of farmers' associations, age groups, business, organizational and religious groups. This was evaluated by asking members of self-evaluation of how active they were in decision-making processes of these organizations. The most important social organization as evidenced from the result of this study is the co-operative societies. Co-operative societies have become the means in which individuals or households choose in order to minimize the constraints posed by limited access to financial services in the rural and urban communities. According to Yebisi (2014), a co-operative society is a socio-economic association of human beings who have come together voluntarily for the purpose of solving their common economic and social problems on democratic basis. The most common ones in the study area are Rotatory Money Savings and Credit Associations (ISUSU) and the self Help Groups (SHGs). These two associations serve as the most common means in which individuals come together, to pool their resources in order to achieve economic or other social objectives, which if may not be achieved individually and independently given their merger resources. In these arrangement individuals, especially the low income people meet in order to borrow and save together. It is an informal arrangement where money is not saved for long but changes hands rapidly, satisfying both investment, consumption and production needs. The study identified that membership of social organization positively influenced households decision to diversify.

The findings of this study agrees with DFID (2004) report which stated that assess to social capital or network of social organizations such as family associations, social clubs, co-operative association, local unions, relationships of trust and access to wider institutions of welfare support enable people to interact with others and pursue their respective livelihood targets. It also involves wider interactions outside the communities which people use as a medium to pursue different livelihoods. For instance farmers often get to know of a new variety of crop by the experiences of other farmers. Moreover, other farmers are often the most trusted sources of information on how to start the cultivation of these crops. Meetings of social organizations usually serve as a good opportunity to meet other famers and discuss such issues.

Economic factors
The indentified economic factors that influenced rural farm household's decision to diversify their income into the rural non-farm sector are poor household earnings from farming limited access to credit facilities and profit motives.

Poor Household Earnings from Farming
Poor household earnings from farming (0.433) is a push factor and has been identified by this study as one of the economic factors that push rural farm families into diversification of their income out of agriculture. This is because in areas with poor agro-climates and risky, less dynamic agriculture, non-farm activities enable households to moderate risk and cope with periodic severe downturns in agricultural productivity.

Limited Access to Credit Facilities
Limited access to credit facilities loaded 0.637. One of the major issues affecting the rural economy is lack of financial capital. Income used for start-up capitals and working capital is an important resource for both farm and non-farm growth. According to IFAD (2001), raising capital to start farm or non-farm activities can be a daunting task in rural areas, where personal savings serve as the most important source for starting up non-farm business and also income from non-farm sources provide extra income for expansion of the farm production. The size of the initial investment capital determines the scope and scale of the farm and non-farm industry. Due to the difficulty encountered in getting agricultural credit facilities and inherent risk in the production proper, many farmers decided to diversify their income source out of core agricultural production. From the survey result many of the rural farm households in South-East Nigeria source their investment capital from informal sources mainly from personal savings, friends and relatives; self help groups (SHGs), professional money lenders, rotational contributions, and unregistered cooperative societies. This finding corroborates Iyanda *et al*. (2014) who reported that informal source of credit especially personal savings have contributed positively in determining the maize production Yewa North of Ogun State. Due to the limited access to credit facilities especially the formal sources it has led to over dependence on informal source of capital and this can pose enormous constraints to agricultural production especially the small scale producers in their bid to break the vicious circle of low savings, low investment and low production as this in turn results to low savings again as capital from this informal source is not always enough to expand production to a large scale. Rural farmers are considered by IFAD and World Bank as a vital tool in poverty reduction and rural development.

According to World Bank (2008), rural famers are often excluded from credit facilities which are necessary for growth of the small and medium enterprise. This is because they are unable to meet the conditions needed to access such facilities from financial institutions. As a result households in rural communities depend heavily on informal lenders for their financial needs. Several authors maintain that empowering small-scale farmers, landless people and rural women to generate sustainable incomes form farming and other non-farm activities through micro-credit could have multiple effects on poverty reduction and rural development. Experience has shown that direct access to financial services affects the productivity, asset formation and income and food security of the rural poor (IFAD 2011). Several reasons were identified as to why majority of the population could not apply for loan. The reasons ranged from high interest rate, non-availability of financial institutions in rural areas, lack of knowledge on how to apply and inability to meet collateral requirement. According to CBN (2007), the economy's vibrant informal sector employs 70 % of the population and has 80 million micro entrepreneurs, who do not have access to financial services.

Profit Motive
Profit motive has 0.821 loading. It is widely reported in the literature that poverty rates are highest in rural areas of developing economies. It is certain that the main occupation of the rural population is

farming. Literature shows that farming alone, has failed to lift rural households out of poverty. Some authors recognise that the most effective way of increasing income and reducing poverty will be to increase the productivity of the resources which people depend on for their livelihood. These resources are farm and non-farm activities. Profit motive has been identified by the study as one of the factors that induce rural households in South-East, Nigeria to diversify their income out of agriculture.

Sheyin (2016) showed that during years when non-agricultural employment increases rural poverty declines and off-farm rural employment is crucial to reducing rural poverty and to secure adequate livelihood within the households of smallholders and landless agricultural labourers. IFAD (2012) maintains that income from non-farm sector assists the small-farm households to become hunger-free and that through effectively – managed 'monetization' small farm households could benefit from globalization and avoid poverty.

Table 3: Varimax Rotated Component Matrix on Factors Influencing Farm Household Participation in Different Non-Farm Activities.

S/N	Factors	Productive Factor	Economic Factor
V_1	Poor returns on agricultural activities	.815	-.116
V_2	Small farm size	.909	-.001
V_3	Poor household earnings from farm	.098	.433
V_4	Risk and uncertainties in agriculture	.920	-.117
V_5	Poor access to physical infrastructure	.119	-.939
V_6	Poor productive assets	-.877	.274
V_7	Limited access to credit facilities	-.683	.637
V_8	Others are participating in it	-.862	-.102
V_9	Profit motive	-.185	.821
V_{10}	Membership of social organization	.897	.295

Significant based on Kaiser normalisation.

4. Conclusion and Recommendation

In line with findings of the study, it is concluded that socio-economic characteristics of the of rural non- farm households have significant effect on income diversification in southeast Nigeria. Consequently, the study recommended that government should increase adult learning education outreach centres in the rural areas in order to eradicate the low level of education among rural people in the study area . It was also recommended that skill acquisition centres should be adequately provided through the private-public partnership development scheme to reduce the high level of unskilled labour available in the area.

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