

# Determinants of participation in entrepreneurial activities among rural households: Evidence from Borno State, Nigeria

Maryam A. Koko<sup>1</sup>, Bashir Kachalla Mohammed<sup>2</sup>

<sup>1</sup>Department of Business Administration, Faculty of Management Sciences, Usmanu Danfodiyo University Sokoto, Nigeria.

<sup>2</sup>Department of Remedial Arts, Ramat Polytechnic Maiduguri, Nigeria.

---

**Abstract:** This study focuses on the determinants of participation in entrepreneurial income generating activities among rural households in Borno State, Nigeria. 2014-2015 General Household Survey data conducted by The National Bureau of Statistics of Nigeria was used, and the study use purposive sampling technique to select a sample of 292 rural households since the study is on rural households. The result was analyzed using Logit model. Result of the study revealed that Gender of the household head, education, and occupation, and household size, access to credit and family type has positive and significant impact on participation in entrepreneurial income activity. Therefore, the study recommends that government at local, state and federal level are advised to establish a sustainable framework that will enable rural dwellers have access to credit at reduced interest rates. Households involve in small scale traditional entrepreneurial activities should also be provided with skill enhancing training by the government and non-governmental organisation in order to improve the quality of commodities they provide and get attractive return.

**Keywords:** Entrepreneurial activities, Rural Households, Borno, Nigeria.

---

## 1. INTRODUCTION

Despite the speedy process of development witnessed in most emerging countries, poverty remains predominantly a rural phenomenon. The World Bank estimate indicates that over two-third of the poor lives in rural areas of the third world countries (World Bank 1999). Todaro and Smith (2009) also assert that over 70% of the poorest people in the world are found in rural areas and are mostly involved in subsistence farming.

Anriquez and Daidone (2010) asserts that stakeholders, especially the academia and policy makers regarded the rural economy as basically agrarian but in reality it is far beyond that. It comprises both agricultural (farm) and non-agricultural (entrepreneurial) sectors as it joins the market economy that is complex and diverse. The rural entrepreneurial sector do not only contributes directly to rural households' incomes that create employment opportunities, but it also provides avenues for input supplies to the farming sector and creation of entrepreneurship activities and other value adding opportunities.

Literature on rural sector development has shown that the rural households depend not only on agriculture to sustain their livelihood but are also engaged in other form of income generating activities such as entrepreneurship and venture creation. The combination of these complex and diverse activities is the effect of the rural households' participation in

entrepreneurial activities to supplement income from farming thereby diversifying their source of income to minimize agricultural shocks. (Kilic Carletto, Miluka and Savastano 2009).

The livelihood of rural households are mostly characterized by complex methods that involves various income generating activities by one or more household members, as entrepreneurial income activities undertake an increasingly important role over time (See Saliu and Adebayo 2010; Ibekwe, Okorji, Nwagbo, Eze, Henri-Ukoha, Osuji and Enyia, 2012; Jabo M. S. M., Ismail, M. M., Shamsuddin, M. N. and Abdullah, A. M. (2014a); Jabo, M.S.M., Ismail, M.M., Abdullah, A.M. and Shamsudin, M.N. (2014b); Ojeleye, Saleh and Oyewole 2014; Madaki and Adefila 2014; Shehu and Abubakar, 2015, Kimty 2015).

Over the years, several studies were also conducted in Nigeria and beyond on both demographic characteristics and socio-economic features that determine participation in entrepreneurial income by rural households. Variables such as household's age, household size, gender, education, marital status, dependency ratio, land holding size, access to formal credit, distance to community center, value of livestock, access to tarred road, total expenditure on food and non-food items, remittance to household and membership of association were used. (See Ibekwe *et al.* 2010; Timothy 2011; Jabo *et al.* 2014a; Jabo *et al.* 2014b; Ojeleye, Saleh and Oyewole 2014; Madaki and Adefila 2014; Ike 2015; Kimty 2015 and Shehu and Abubakar, 2015) but none of these studies captured whether the household head practice monogamy or polygamy as this is bound to play a significant role in influencing the type of income generating activity to be adopted by the rural household in the study area.

Furthermore, there have been a number of studies in Nigeria and beyond on entrepreneurial income by many scholars like Abdulai and Delgado (1999); de Janvry and Sadoulet (2001); Beyene, (2008); Malek and Usami (2009) Ibekwe *et al.* (2010); Zahonogo, P. (2011); Ibekwe *et al.* (2012); van Leeuwen and Dekkers (2013); Jabo *et al.* (2014b); Shehu and Abubakar (2015) and Ike (2015) all of which present evidence of determinants of participation in entrepreneurial income activities as an income source to rural households, but to the best of our knowledge, no study was conducted in the north-eastern part of Nigeria particularly Borno state. Hence the aim of this study is to address this information gap. Therefore, the study seek to assess the determinants of participation in entrepreneurial income generating activities of entrepreneurs among rural households in Borno State, Nigeria. The inspiration for this study comes from the fact that farm sector alone cannot provide the needed livelihood of the rural population in the state that was devastated by insurgency and poses a threat to growth and development in the area and Nigeria at large (Mohammed and Ahmed 2014)

## 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

### Concept of Rural Entrepreneurial Economic Activity

Lanjouw (1999) defines the rural entrepreneurial sector as any income generating activities including paid labour or self-employment that are non-agricultural and entrepreneurship activities that are operated in the rural areas. Therefore, entrepreneurial economic activities are diverse and heterogeneous incorporating all entrepreneurship activities and entrepreneurial jobs which requires significant access to assets, funds, education and training or self-employed menial jobs like road side hawking that requires low asset requirement and no barriers to entry.

Due to its production relation and employment opportunities it creates, the entrepreneurial sector is paramount to the growth and development of the rural economy. The contribution it provides to rural households income represents a substantial and greater share of rural incomes.

### Determinants of Participation in Entrepreneurial Economic Activity

Existing literature have shown that the household's decision to participate in entrepreneurial income generating activity is determine by various factors. Reardon *et al.* (2006) classify the factors responsible for the determinants of rural household participation into pull and push factors which are mostly facilitated by the household competence and the institutional atmosphere.

The pull factors include: low risk related with the activity compared to farm activity, need for immediate cash for transaction purpose, greater return on labour, greater yield on investment, desire for better life among the youth and economic opportunities. The push factors on the other hand include; increase in population, scarcity of fertile land and

decline in its access, poor farm output, deteriorating earnings from farming, temporary shocks, absence of rural financial markets, and inaccessibility to market of farm inputs and weakening of the natural resource base.

### **Rationale for the Development of entrepreneurial Economic Activities**

The most important sub-sector of the economy next to petroleum in Nigerian is certainly Agriculture. It account for nearly 70% of the labour force and about 40% of the Gross Domestic Product (CBN, 2008).

Despite being a key pillar to household's income, agriculture alone cannot provide the sufficient needs of the rural household especially in the third world countries. Although conventionally, all rural income are belief to be farm income, evidence has shown that only few households derive the entire livelihood income source from agriculture.

Ellis (1999) argues that, many years ago, traditionally it was widely believed that increase in output and incomes from farm sector is the catalyst for the growth of the entrepreneurial sector but this is not the case now. Farm household are still searching for different prospects to increase their income and makes its flow steady (Chapman and Tripp, 2004). Therefore, the rural economy is not solely agriculture sector based but has a lot of activities and prosperous enterprise. (Chapman and Tripp, 2004; and Alobo, 2012).

### **Theoretical Framework**

Several factors influencing the rural household to take decision with regards to participating in various income generating activities. Qasim, (2012) asserted that in developing countries, several uncertainties (social and natural markets) influenced the rural household's behavior. This has pose series of constraints in determining their production decisions.

The economic theory underpinning this study is the Utility theory. The theory is concern with preferences or value of people with assumptions about a person's choice that enable them to be represented in numerically beneficial ways. The theory also concerned with choice and judgments of prefer ability, goodness, value or any other related concepts. Fishburn, (1968). This theory provides an operational structure for the appraisal of alternative choices made by either individual, firms and organizations. Utility functions also pave a path to measure the preferences of investor's for wealth and the risk they are ready to undertake in their quest of attaining greater wealth (Norstad, 2011).

Thus, this theory assumes that decisions are made base on utility maximization principles to which the best choice is the one that offers the highest utility (satisfaction) to the decision makers.

Therefore, this study adopts this theory as a working framework since it captured the central message of the study as it vividly explain the relationship between participation in income generating activity by a household and its major determinants which is one of the objectives of this study.

### **Empirical Literature Review**

This section will discuss the different empirical studies that have been conducted on entrepreneurial income generating activities in Nigeria, Africa, other developing countries and developed nations.

#### **• Age of the Household Head**

Many studies were conducted on determinants of participation in entrepreneurial income activity that captured age of household head as one of the independent variables. For instance, Ibekwe et-al (2010) conducted a study on determination of participation in entrepreneurial income activity among farm household in South-eastern Nigeria. The study uses both interview-based survey of households and structured questionnaire to collect data. Variables studied include: age of households head, his education, farm size, occupation, the household size, investment in farm and the value of its output. Result from the regression analysis indicates that some variables like age of the household heads, farm size, education of household head, value of farm output and occupation of the household head are also significant factors in determining entrepreneurial income at household level.

In the same vein, Ojeleye, Saleh and Oyewole, (2014), Jabo et-al (2014a), Zahonogo, P. (2011), Timothy (2011), Abdulai and Delgado (1999) investigates the linkage between rural entrepreneurial income and poverty reduction. Result from the data analyzed from the studies shows that age of household head was found to be a significant factor that determines participation in entrepreneurial income generating activity.

- **Gender of the Household Head**

Owoo and Naudé (2014) studied performance of entrepreneurial enterprise in Ethiopia and Nigeria using spatial equilibrium. Household head gender, age, marital status, education level, household size, presence of cooperative in community, presence of microfinance institution, access to phone, distance to asphalt road, distance to market were the variables studied. Using a sample size of 259 households in Ethiopia from 2011 Ethiopian Rural socio-economic Survey (ERSS) and 379 households in Nigeria from 2010-2011 Nigeria General Household Survey (NGHS), the result indicate that positive relationship exist between entrepreneurial income generating activity and gender while the relationship between rural entrepreneurial activity performance and agricultural activity was negative. Finally, the study concludes that there would be investment in rural infrastructure that will support the performance of entrepreneurial enterprises.

Similarly, Seng (2015), Madaki and Adefila (2014), Malek and Usami (2009) found out that gender of the household head contribute positively in aggregate entrepreneurial income.

- **Level of Education of Household Head**

Ibekwe *et al.* (2012) studied the determinants of participating in income generating activities in Ohaji/Egbema Local government Area of Imo State, Nigeria. A multi-stage random sample of 80 male headed households and 80 female headed households were used and interviewed with validated and structured questionnaire. Data were analyzed using descriptive statistical tools and Logit regression analysis. Results of the regression analysis showed that the level of education of the household head, was significant in determining income generation.

Similarly, the studies of Zahanogo, P. (2011), Saliu and Adebayo (2010) and Beyene (2008) reveals that education level of the household head influence the level of participation in entrepreneurial activities. Furthermore, it shows that rural economy depends not only on agricultural development but other rural entrepreneurial income generating activities.

- **Access to Credit**

Shehu and Abubakar (2015) uses the Nigerian nationally representative household level data to examine the factors influencing the decision of farm household to participate in entrepreneurial enterprise (NFE) activities in rural Nigeria. The model was estimated using Tobit regression. Variable studied include gender, age and years of education of the adult members of the household, household size, access to formal credit, social capital, proximity to market, access to mobile phone, electricity and public transport. One unique feature to this study was that, households having access to social and financial capital can overcome the entrepreneurial enterprise's entry barriers. This suggests that for the development of rural entrepreneurship in the country, the farm households need to be provided with effective micro-credit and social network.

- **Remittance**

Ike (2015) use both descriptive statistics and the Tobit regression to analyze data collected from 180 households in 18 communities of Southeastern Nigeria on factors that cause households to participate in entrepreneurial activities. The study precisely studies the socio-economic features of farmers that contribute to participation in entrepreneurial activities. Tobit model and descriptive statistics were used to analyze the data collected. Result from the Tobit regression model shows that all the variables studied exclusive of gender are all significant. The coefficient of remittance is negative. The study recommends an all-inclusive collaboration among the three tiers of government in to pursue rapid development in the rural areas by providing basic infrastructural facilities.

- **Membership of Association**

Ojeleye, Saleh and Oyewole, (2014) examine entrepreneurial income and food security status of farm households in Nigeria. Descriptive statistics was used to examine the socio-economic characteristics of the respondents while the effect of entrepreneurial income and other socio-economic variables were examine via Logit model. Their findings show that entrepreneurial income significantly influences household food security status. The Chi-Square result of 80.76 was found to be significant at 1% level. Variables that are significant include: household size, consumer credit, farm output, total farm income and total farm size. However, membership of association was found to be not significant to participation in

entrepreneurial income activity. The study suggests adoption of sound economic policies and programs that are geared towards empowering the rural household.

### 3. RESEARCH METHODOLOGY

#### Description of the Study Area

Borno is one among the 36 states that formed the federal republic of Nigeria. Located in the north-eastern geo-political part of the country with Maiduguri as its capital, the state has an area of 61, 435sq. km. One unique features of the state is that it shares border with three countries namely Cameroun republic to the east, Chad republic to the north-east and Niger republic to the north. Located on latitude  $10^{\circ}$  N and  $14^{\circ}$  N and longitude  $11.30^{\circ}$  E and  $14.45^{\circ}$  E, the state has a hot and dry climate in most part of the year particularly from March to July and a cold climate during the hamattan period which last from November to February. The period of rainfall is normally from June to September in the north and from May to October in the southern part which varies from 300mm to 500mm and 700mm to 1000mm in the northern and southern part respectively. (Mustapha, Gwary and Makinta, 2014)

Agriculture is the mainstay of the state's economy that has a vast fertile land. It is suitable for the production of arable crops. The state is also endowed with solid minerals like Gypsum, limestone, clay, potassium and uranium. Recently, exploration of crude oil was started in the shores of the lake Chad Basin area. Other entrepreneurial activities engage by the populace includes: cap making, weaving and knitting, groundnut oil processing, dyeing of cloths, ginnery and tannery, food processing, local drinks production, Local perfume making, blacksmith and goldsmith, pottery, mechanic, vulcanizer, Tricycle riding(Keke Napep), etc. (Mustapha, Gwary and Makinta, 2014)

The study uses 2014-2015 General Household Survey data produced by the National Bureau of Statistics (NBS) with support of World Bank. The sample for this study was drawn from the National General Household survey data of five thousand three hundred and fourty (5,340) households. The sample frame includes all thirty-six (36) states and the Federal Capital Territory (FCT), Abuja. The survey canvasses 500 enumeration areas (EAs) that cut across urban and rural areas. The survey covered a wide-ranging socio-economic topics, which were collected through questionnaires administered to the households.

The study used purposive sampling technique to select Borno state as the case study area. Similarly, all the 14 local government area covered and classified as rural areas in Borno state by the survey were selected purposively since the study is on rural households. A total of 292 households were identified by the survey of which all were selected.

#### Variables Measurement

The model for this study used both dependent and independent variables and how they are measured. To conform to literature, the variables captured in the model for this study are measured as follows: The dependent variables for this study is the Level of participation in entrepreneurial income The independent variables used in the study include the following:

- i- Age of Household Head: This is measured by age of the household head in years in line with the study of Ojeleye, Saleh and Oyewole (2014).
- ii- Gender: This is measured by sex of the household head (dummy, male =1, otherwise =0) following the work of Ike (2015).
- iii- Educational level of household Head: This is measured by the highest level of education completed by household head as measured by Ibekwe *et al.* (2012)
- iv- Family Type: This is measured by the family type of the household head. (dummy, 1 if monogamy, 0 if polygamy)
- v- Access to credit (formal or informal). Dummy, if have access = 1, otherwise = 0 as used by Shehu and Abubakar (2015)
- vi- Remittance to household: This is measured by the economic support received in form of money by the household from relatives and friends not presently living with the household. (Dummy= 1 if the household head receive remittances and 0 otherwise) in line with the work of Malek and Usami (2009)

vii- Membership of association: This is measured by the participation of the household head in business or cooperative association. (Dummy= 1 if the household head holds a membership and 0 otherwise) in line with the work of Ojeleye, Saleh and Oyewole (2014).

The model considered to fit this study includes the Logit model since the dependent variables for these hypotheses is the level of participation in entrepreneurial income (High Participation =1, Low participation = 0). Also, the model was found to be appropriate since the dependent variable is dichotomous (binary). Tabachnick and Fidell (2012) further confirm that Logistic regression is used to describe data and to explain the relationship between one dependent binary variable and one or more nominal, ordinal, interval or ratio-level independent variables.

Ibekwe *et al.* (2012) , Zahonogo (2011) and Ojeleye, Saleh and Oyewole, (2014) further confirmed that the Logit regression model is suitable when the dependent variable has a binomial outcome. Their model with slight modification was expressed as:

The Logit model is expressed as:

$$\text{Logit}(Y_i) = \ln \left( \frac{Y_i}{1 - Y_i} \right) = \alpha + \beta_1 X_{i1} + \beta_2 X_{i2} + \dots + \beta_n X_{in} \quad \text{eqn 3.1}$$

$$1 - Y_i$$

$$I = 1, \dots, n,$$

Where,

$Y_i$  = The dependent variable

$X$ = Represent the Vectors of the independent variables

$\alpha$ = Represent Constant,

$\beta$ = Represent coefficient of the independent variables

$E$  = Error term

The data was analyze using relevant descriptive and inferential statistics to test the hypotheses. Dummy type of data was also analyze using percentage, frequency and chi-square test to see the existing relationship between categorical or dummy variables and entrepreneurial income. The data was computed and analyze using relevant and appropriate economic theory with the aid of STATA (14) package.

This study therefore, besides descriptive statistical tools, employ the Logit model to test the hypothesis. It was used to analyze both the demographic and economic factors that affect the participation of the household in rural entrepreneurial activity as used by Zahonogo, (2011), Ibekwe *et al.* (2012) and Ojeleye, Saleh and Oyewole (2014).

#### 4. RESULTS AND DISCUSSION

Table 1: Descriptive Analysis of Variables

Variables	Respondents Opinion	Frequency	Percentage
Age	Less than 25	14	5
	25-35	89	30
	36-45	143	49
	Above 45 years	46	16
	Total	292	100
Gender	Male	282	97
	Female	10	3
	Total	292	100
Educational Level	No Education	54	19
	Qur'anic Edu	39	13



	Intergrated Quran	36	12
	Primary	46	16
	Secondary	91	31
	Tertiary	26	9
	Total	292	100
Family Type	Monogamous	235	80
	Polygamous	57	20
	Total	292	100
Access to Credit	Yes	13	4
	No	279	96
	Total	292	100
Remittance	Yes	109	37
	No	183	63
	Total	292	100
Membership	Yes	32	11
	No	260	89
	Total	292	100
Participation	High	96	33
	Low	196	67
	Total	292	100

Source: 2014-2015 General Household Survey Data, National Bureau of Statistics, Nigeria

From table 1, the result indicated that out of two hundred and ninety two respondents, 14 of them equivalent to 5% fall into the age bracket of less than 25 years. Eighty nine (89) respondents (30%) are in the age range of 25-35. One hundred and forty three (143) other respondents, constituting about 49% are between the ages of 36 and 45. Also, about forty six (46) equivalent to 16% of the respondents which are above 45 years. This shows that an average rural household head in the study area was in his middle years suggesting high economic productivity. Moreover, as can be seen from Table 4.1, 282 respondents (97%) are males and the remaining respondents constituting about 3% are females. The predominance of male headed household in Borno state could be attributed to their tradition which allows only the male child to be head of household. Nevertheless, 26 respondents constituting 9% acquired tertiary education. Ninety one (91) obtained 'O' level results while only 46 respondents about 16% obtained primary school leaving certificate. 12% that is, 36 respondents attended integrated Qur'anic education, while thirty nine respondents reckoning 13% attended Qur'anic education only. Thus, 54 respondents (19%) have never attended school. This implies that majority of the household head are literate and hence helps a lot to determine participation in entrepreneurial income activities.

Furthermore, two hundred and thirty five (235) household heads (80%) are practicing monogamous marriage, while the remaining 57 household heads reckoning 20% are practicing polygamous marriage. Similarly, one hundred and nine households (37%) are receiving financial support from their relatives living outside the family, while 183 households reckoning 63% are not receiving any support inform of remittance. This implies that majority of the households are not enjoying any financial support from their relatives that are not staying with them. However, thirteen (13) household heads equivalent to 4% having access to credit either in a short term or long term from both banks and non-banks financial institutions, while 279 households (96%) have no access to credit in the study area. Moreover, only thirty two household heads (11%) have membership with associations or organizations, whereas about 260 households reckoning 89% did not have membership with any association or organization. This implies that most of the respondents are not registered with any Community Based Organisation.

Finally, ninety six (96) households equivalent to 33% participated actively in the entrepreneurial activities, while one hundred and ninety six (196) respondents representing (67%) engaged in farming activities with less involvement in entrepreneurial activities. This implies that majority of respondents in the study area are farmers.

### Inferential Statistics

This section deals with presentation and interpretation of the results of the determinants of participation in entrepreneurial income generating activities among rural household in the study area.

**Table 2: Results of the Determinants of Participation in entrepreneurial income activity**

Dependent Variable : Level of participation	in entrepreneurial income	
Independent variables	Coefficient	Marginal effect
Age	-0.65*** (0.1870)	-0.44*** (0.1059)
Gender	1.53** (1.0809)	0.49** (0.5737)
Level of Education	7.81*** (1.6730)	5.7517*** (0.8768)
Family Type	1.46** (0.6495)	0.31** (0.5047)
Access to Credit	1.07*** (0.5683)	0.25*** (0.3693)
Remittance	-3.56*** (0.7233)	-0.63*** (0.3889)
Membership of Association	0.06 (0.5523)	0.16 (0.3613)
Number of observation	292	
LR Chi <sup>2</sup>	300***	
Pseudo R <sup>2</sup>	0.74	

Significant at (\*\*\*) 1%) (\*\*5%) (\*10%)

Source: Author's computation using STATA 14, extracted from appendices.

### Discussion of Findings

This study has assessed the determinants of participation in entrepreneurial income generating activities among rural households in Borno state, Nigeria. These include: Age, Gender, Level of Education, Family type, Access to credit, Remittance and Membership of association. To achieve the specified objectives, the study employed descriptive statistics together with logistic regression.

From the result in table 4.2, age is statistically significant and negative at 1% level, indicating that increase in age may likely decrease participation in entrepreneurial income by 0.44 or 44%. This means as age increase, the likelihood of participation in entrepreneurial income generating activities decrease. This findings support the conclusion reached by Jabo et-al (2014a) Ojeleye, Saleh and Oyewole, (2014), Ibekwe et-al (2010) and Timothy (2011).

Likewise, the coefficient of gender is positive and statistically significant at 5% level, indicating that male do participate in entrepreneurial activities more by 1.53 points in relation to their female counterpart. That is, the probability of male participating in entrepreneurial activities would be 49% higher than their female counterpart. This is in line with the descriptive statistics in Table 4.1 which shows that participation in entrepreneurial activities differs between the two sexes as male are more engaged in labour than females', this is because they mostly work outside their homes and rural environment. In most Nigerian cultures, particularly the northern region, men often dominate women and part of the



responsibility of male is to work and provide the family income as they are the breadwinner. The result is in line with earlier findings that male participate more in entrepreneurial activities than females. Madaki and Adefila (2014), Owoo and Naude (2014) and Khan, Deb and Bantilan (2014). However, findings by Seng (2015) fail to concur with the above findings.

Similarly, table 4.2 shows that education of household head coefficient of 7.81 is statistically significant and positively influences participation in entrepreneurial activities at one percent level; such that as the educational level of household head increases, participation in entrepreneurial income generating activities is more likely to increase by 5.75. The result of this study supports the finding of Saliu and Adebayo (2010), Ibekwe *et al.* (2010), Atamanov (2011), Zahonogo, P. (2011) and Ibekwe *et al.* (2012) as they found that education of household head increases the chances of participating in various forms of income generating activities thereby increasing the level of household income from entrepreneurial activities.

As for the family type to which the household belongs, the logit interpretation in table 4.2 shows a positive and significant influence on the dependent variable at 5% level by 1.46. This means an increase in number of wives by one might increase participation in entrepreneurial activities by 31%. The study found that it is the practice in Nigeria particularly among rural women who are in polygamous house to participate in other entrepreneurial activities to supplement the income provided by the household head on the expenditure of maintenance of children and households at large.

Another puzzling result, obtain on the coefficient of access to credit depicts a positive and statistically significant effect at 1 percent level on entrepreneurial income generating activities with 1.07 on the level of participation as shown in table 4.2. The result shows that access to credit tremendously increases participation in entrepreneurial income activities by 25%. The findings concur with other studies, which found that households who have access to credit participate more in entrepreneurial income generating activities since it serves as a source of capital. Access to credit also gives the household the purchasing power to acquire or hire factors of production. (Timothy, 2011; Berjan, *et al.*, 2013; Ojeleye, Saleh and Oyewole, 2014; Nagler and Naudé, 2014; Shehu and Abubakar, 2015)

Furthermore, the coefficient for remittance of 3.56 is negative and significant to participation in entrepreneurial income at one percent. This indicates that increase in remittance reduced participation in entrepreneurial activity by 63%. Finding of this study concur with the finding of Möllers and Buchenrieder (2011), Timothy (2011) and Ike (2015) who observed that remittance reduce the level of participation in entrepreneurial activity since households might tent to rely on remittance as an income supplement thereby forgoing participation in other income generating activities.

Surprisingly, Table 4.2 Shows that the coefficient of membership of association of 0.06 was found to be positive but has no significant influence on participation in entrepreneurial income generating activities. This indicate that being a member of an association does not influence the level of participation. This result is based on the fact that for one to be a member of an association, he/she might have been participating in similar activities. The findings corroborate the findings of Ojeleye, Saleh and Oyewole (2014), Owoo and Naudé (2014) and Berjan, *et al.*, (2013) who found that although membership of association significantly influences entrepreneurial income, it has no significant influence on the level of participation in entrepreneurial income generating activities.

## 5. SUMMARY, CONCLUSION AND POLICY RECOMMENDATIONS

### Summary of Major Findings

In most emerging countries, poverty remains predominantly a rural phenomenon which account for 70% of the poorest people in the world. They are mostly involved in subsistence farming Todaro and Smith (2009). In Borno state, farm sector alone cannot provide the needed livelihood of the rural population that was devastated by insurgency which poses a threat to growth and development in the area and Nigeria at large. It is imperative therefore, for the households to engage in different income generating activities, in addition to the farm activities.

The findings of the study are summarized below:

- i. Age of the household head and remittance had a negative and significant impact on participation in entrepreneurial income activity.

## International Journal of Novel Research in Marketing Management and Economics

Vol. 6, Issue 3, pp: (12-24), Month: September - December 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- ii. Gender of the household head, education, Family type and access to credit has positive and significant impact on participation in entrepreneurial income activity.
- iii. Access to credit was positive and statistically significant. This shows that it has a positive impact on participation in entrepreneurial income activity among rural households.
- iv. Membership of association was also found to be positive but insignificant. The result shows an insignificant impact of membership of association to participation in entrepreneurial income activity.

### Conclusion and Policy Implication

The purpose of this study was to assess the impacts of demographic characteristics and economic factors on the level of participation in entrepreneurial income generating activities in Borno state of Nigeria. Based on the above findings, a general conclusion was drawn which shows that both demographic characteristics and economic factors affect household decision to participate in entrepreneurial income generating activities in the study area except membership of association.

Specifically, family type of the households have a significant impact on participation in entrepreneurial income activity. This shows that household heads who practice polygamy participate high in income generating activities thereby earning more income from entrepreneurial activities than household head who practice monogamy. This is so because each of the wives will tend to be engage in income generating activity to supplement their financial needs

Finally, the study found that access to formal credit is an important determinant of entrepreneurial income as none of the study examined disagree with the findings of this study. This means that households who had registered with an association had easy access to credit which is a source of capital and tend to earn more than household who have no access to credit. Thus, access to credit is said to be a major determinant of entrepreneurial income which is in line with a priority expectation.

### Recommendations

Based on the findings of this study, the followings recommendations are made;

- i- The findings of this study revealed that access to credit was statistically significant. Therefore, government at local, state and federal level are advised to establish a sustainable framework that will enable rural dwellers have access to credit at a reduced interest rates. The provision of low interest capital will promote participation in income generating activities thereby boosting the acquisition of productive assets which could increase household income, hence reducing their level of poverty.
- ii- Private organizations, international agencies, non-governmental Organisation and government at local, state and federal level implementing policy intervention strategies currently targeting urban households, should also focus on rural households. This can be achieved through assurance of adequate access to credit facilities on reasonable terms for acquisition of necessary inputs.
- iii- Even though female participate in a number of entrepreneurial activities, they earn lower than their male counterparts from these activities. This is because most of them are involved in low return small scale traditional entrepreneurial activities like: cap making, weaving, spinning, pottery and preparing local drinks like 'Sobo' and 'Kunun Aya', and shop keeping, Thus, they should be provided with skill enhancing training by the government and non-governmental organisation in order to improve the quality of commodities they provide and get attractive return.

### REFERENCES

- [1] Abdullahi, A. and Delgado, C. L. (1999). Determinants of participation in entrepreneurial income activity on earnings of farm based husbands and wives in Northern Ghana. *American Journal of Agricultural Economics* 81(1): 117-130.
- [2] Alobo, S. (2012) "Determinants of Rural Household Income Diversification in Senegal and Kenya" Lund University (Sweden), pp 18.

- [3] Anriquez, G. and Daidone, S. (2010). Linkages between the Farm and Entrepreneurial Sectors at the Household Level in Rural Ghana: A Consistent Stochastic Distance Function Approach. *Journal of Agricultural Economics*, 41(1): 51–66.
- [4] Atamanov, A. (2011). Micro-economic analysis of rural entrepreneurial activities in the Kyrgyz Republic: What determines participation and returns? *A publication of Maastricht Graduate School of Governance*, Maastricht University, The Netherlands.
- [5] Berjan, S., Bilali, H., Sorajić, B., Driouech, N., Despotović, A. and Simić, J. (2013) Off-Farm and Entrepreneurial Activities Development in Rural South-Eastern Bosnia. *International Journal of Environmental and Rural Development* 4(2): 4-1
- [6] Beyene, A. D. (2008). Determinants of Off-Farm Participation Decision of Farm Households in Ethiopia. *Agricultural Economics Research Policy and Practice in Southern Africa*, 47(1): 140-161.
- [7] CBN (2008) "The Central Bank of Nigeria Partnership with Alliance for a Green Revolution in Africa (AGRA): Conceptual Issues, Operations and Prospects for Food Security in Nigeria", 2008, 48(4): 181–192.
- [8] Chapman, R. and Tripp, R. (2004) "Background Paper on Rural Diversity and Agriculture"; Paper prepared for the 2004 AgREN electronic conference on the implication of Rural livelihood Diversity for Pro-poor Agricultural Initiatives 2004, pp.7
- [9] de Janvry, A & Sadoulet, E (2001). Income Strategies among Rural households in Mexico: the role of participation in off-farm activities. *World Development report*. 29(3): 467-480
- [10] Ellis, F. (1999) "Rural Livelihood Diversity in Developing Countries : Evidence and Policy Implications" Overseas Development Institute, 1999, pp.10.
- [11] Ellis, F. (1998). Household Strategies and Rural Livelihood Diversification, *Journal of Development Studies*, 35(1): 1-38.
- [12] Eltayeb, M. A. and Ebiadalla M. E. (2012) "Determinants of Farmers' Access to the Formal Credit Sector in Kassala state, East Sudan" *Kassala University Journal*, 6 (1): 31-70.
- [13] Fishburn, P. C. (1968). Utility Theory. *Management Sciences*. 14 (5): 335 – 378.
- [14] Haggblade, S., Hazell, P., and Brown, J. (1989). Farm-Entrepreneurial Linkages in Rural Sub-Saharan Africa. *World Development*, 17 (8):1173–1201.
- [15] Ibekwe, U., Eze, C., Onyemauwa, C., Henri-Ukoha, A., Korie, O., and Nwaiwu, I. (2010). Determinants of Farm and Off-Farm Income participation Among Farm Households in South East Nigeria. *Academia Arena*, 2(10): 58-61.
- [16] Ibekwe, U.C., Okorji, E. C., Nwagbo, E.C., Eze, C.C., Henri-Ukoha, A., Osuji, M.N. and Enyia, C.O. (2012) Determinants of participation in entrepreneurial Income Generating Activities in Ohaji/Egbema LGA of Imo State, South East Nigeria. *International Journal of Agricultural and Food Science*. 2(4): 143-145
- [17] Ike, P. C. (2015). Determinants of Participation in Entrepreneurial Economic Activities in South East Nigeria: A Tobit Analysis Approach. *Journal of Biology, Agriculture and Healthcare*. 5(2):102-108
- [18] Jabo M. S. M., Ismail, M. M., Shamsuddin, M. N. and Abdullah, A. M. (2014a). The impact of entrepreneurial income generating activities on the food security status of rural households in Nigeria. *International journal of agricultural sciences and veterinary studies*. 2,(4) assessed from <http://www.ijasvm.com/currentissue.php>
- [19] Jabo, M.S.M., Ismail, M.M., Abdullah, A.M. and Shamsudin, M.N. (2014b). Is the participation in the entrepreneurial income generating activities help smooth food consumption? Evidence from rural Nigeria. *Proceedings of the Australian Academy of Business and Social Sciences Conference 2014 (in partnership with The Journal of Developing Areas)*
- [20] Khan, P. E., Deb, U. and Bantilan, C. (2014). Rural entrepreneurial economy in Sat India: nature, extent and determinants. *Paper presented at the 8th Conference of the Asian Society of Agricultural Economists (ASAE) held*

**International Journal of Novel Research in Marketing Management and Economics**

Vol. 6, Issue 3, pp: (12-24), Month: September - December 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

on 15-17 October 2014 at the BRAC Centre for Development Management (BRAC-CDM), Savar, Dhaka, Bangladesh.

- [21] Kilic T., Carletto C., Miluka J. and Savastano S., (2009). Rural entrepreneurial income and its impact on agriculture: Evidence from Albania, *Agricultural Economics*, 40(2): 139-160
- [22] Kimty. S. (2015). The Effects of entrepreneurial activities on farm households' food consumption in rural Cambodia. *Development Studies Research*, 2(1): 77-89, <http://dx.doi.org/10.1080/21665095.2015.1098554>
- [23] Lanjouw, P. (1999). Rural nonagricultural employment and poverty in Ecuador. *Economic Development and Cultural Change*, 48(1): 91-97
- [24] Madaki J. U. and Adefila, J. O. (2014). Contributions of rural entrepreneurial economic activities to household income in Iere area, Kaduna state of Nigeria. *International Journal of Asian Social Science*, 4(5): 654-663
- [25] Malek, M. A., and Usami, K. (2009). "Determinants of Participation in entrepreneurial income activity in Developed Villages of Bangladesh". *American Journal of Economics and Business Administration*, (1)2: 141-149.
- [26] Mohammed, D. T. and Ahmed, F. F. (2014). The Effect of Insurgency on Borno State Economy (2008 – Oct.2014). *Journal of Economics and Sustainable Development*. 16(6): 10-17
- [27] Möllers, J. and Buchenrieder, G. (2011) Effects of Rural Entrepreneurial Employment on Household Welfare and Income Distribution of Small Farms in Croatia. *Quarterly Journal of International Agriculture*. 50(3): 217-235
- [28] Mustapha, Gwary and Makinta, (2014) Harnessing the economic potentials of Borno state for poverty alleviation in Nigeria. *International journal of research in agriculture and food sciences*, 2(5): 8-14
- [29] Nagler, P and Naudé, W. (2014). Entrepreneurial Entrepreneurship in Rural Africa: Patterns and Determinants. *Discussion Paper No. 8008*. Forschungsinstitut zur Zukunft der Arbeit (IZA) (Institute for the Study of Labour), Bonn, Germany.
- [30] Norstad, J. (2011) An Introduction to Utility Theory. (An electronic work). Accessed on Dec 21, 2016 from <http://www.norstad.org>
- [31] Ojeleye O.A., Saleh M.K. and Oyewole S.O. (2014). Entrepreneurial Income and Food Security Status of Small Scale Farming Households in Nigeria. *Research Journal of Agriculture and Forestry Sciences*. 12(2): 1-7.
- [32] Owoo, N.S. and Naudé, W. (2014) Entrepreneurial Enterprise Performance and Spatial Autocorrelation in Rural Africa: Evidence from Ethiopia and Nigeria
- [33] Qasim, M. (2012) Determinants of Farm Income and Agricultural Risk Management strategies. The case of Rainfed Farm Households in Pakistan's Punjab. *International Rural development*, 2(2): 17-26
- [34] Reardon, T. (1997). Using Evidence of Household Income Diversification to inform study of the rural entrepreneurial labor market in Africa. *World Development* 25 (5): 735-748.
- [35] Reardon, T., Berdegue, J., & Escobar, G. (2006). Rural Entrepreneurial Employment and Incomes in Latin America: Overview and Policy Implications. *World Development*, 29(3), 411-425.
- [36] Reardon, T., Stamoulis, K., Cruz, M.E., Balisacan, A., Berdegue, J., Savadogo, K. (1998). Diversification of household incomes into entrepreneurial sources: Patterns, determinants and effects. *Paper no. 4, IFPRI conference on Strategies for Stimulating Growth of the Rural Entrepreneurial Economy in developing countries*, 17-21 May 1998 at Airlie House, Virginia.
- [37] Saith, A. (1992) *The Rural Entrepreneurial Economy: Processes and Policies* (Geneva: International Labour Office)
- [38] Saliu, O. J. and Adebayo, F. H. (2010). Non- farm Income and Technology Adoption Among Rural Farmers in Yagba East Local Government Area of Kogi State, Nigeria. Kogi State University Department of Agricultural Economics and Extension.

**International Journal of Novel Research in Marketing Management and Economics**

Vol. 6, Issue 3, pp: (12-24), Month: September - December 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [39] Seng, K. (2015) The Effects of entrepreneurial activities on farm households' food consumption in rural Cambodia, *Development Studies Research*, 2(1): 77-89.
- [40] Shehu, A. and Abubakar, N. (2015) Determinants of Participation of Farm Households in Entrepreneurial Enterprise Activities in Rural Nigeria. *International Journal of Economics, Commerce and Management. United Kingdom*. 6(3): 21-28
- [41] Sisay Woinishet. A. (2010) Participation into Off-farm Activities in Rural Ethiopia: Who Earns More? M.A. Thesis, Erasmus University, Hague, Netherland.
- [42] Tabachnick, B. G. and Fidell, L. S. (2012) Using Multivariate Statistics. 6h Edition, Person Education, Boston.
- [43] Timothy, A. T. (2011) Rural Entrepreneurial Incomes and Poverty Reduction in Nigeria. *AERC Research Paper 224*. African Economic Research Consortium, Nairobi January 2011
- [44] Todaro, M. P. and Smith, S. C. (2009). Economic Development, 10th Edition. *Pearson Education Limited*, Harlow, England.
- [45] van Leeuwen, E. and Dekkers, J. (2013) Determinants of Off-Farm Income and Its Local Patterns: A Spatial Microsimulation of Dutch Farmers. *Journal of Rural Studies*, 31(2): 55-66
- [46] World Bank. (1999). World development indicators 1999. Washington, D.C.: World Bank.
- [47] Zahonogo, P. (2011). Determinants of Entrepreneurial Activities Participation Decisions of Farm Households in Burkina Faso. *Journal of Development and Agricultural Economics*, 3(4): 174-182.