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FACTORS INFLUENCING INCOME/ OCCUPATIONAL DIVERSIFICATION AMONG FARMERS: A CASE STUDY OF FARMERS IN BENUE STATE, NIGERIA

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ABSTRACT

Agriculture may be said to has been constrained from providing improved and sustainable livelihood to farmers due to factors like seasonality of agricultural activities, pests and diseases infestations, poor adaptability of crops and livestock to climate change, low price of agricultural commodities and consequently low profit/income from farming. Farmers have therefore resorted to diversification of income sources in order to cope. This study therefore sought to ascertain those factors that facilitate or impede this act. Data were collected with interview schedule from 432 farming households selected from three agro-development zones, twelve blocks and 36 cells of the state. Findings revealed that although the farmers had diversified their occupations mainly in the farm sector, there was no significant difference in the income they generated from farm and non-farm sectors. Formal education ($t = 2.056$; $P = 0.040$) and ownership of farm land ($t= 2.069$; $P = 0.039$) promote occupational diversification among farmers. Natural, institutional, and capacity building factors were extracted as reasons while training, security/logistic, fund/infrastructural, health and stress related problems were extracted as factors that constrained farmers from diversifying their occupations. The study emphasized on the need for Government to situate appropriate measures that will checkmate or monitor the trend of diversification of income sources among farmers especially in the non-farm sector. This is to avoid extinction of agriculture as a livelihood option and it's negative consequences on humanity, economy and the entire universe

Keywords: Reasons, constraints income/ occupational - diversification farmers

1. INTRODUCTION

Occupational diversification is the introduction of one or more alternative income generating activities in order to boost income (Loughrey, Donnellan, Hennessy and Hanrahan, 2013). Farmers may diversify their occupations/ income sources in order to reduce heavy reliance on farming and income accruing from it that are seasonal . This seasonality results to some slack season during which farmers may have to engage in some other activities to keep themselves busy and earn more income.

Diversification has long been viewed as a risk minimization strategy in the face of increasing climatic and economic risks in developing countries. (Weldegebriel, Folloni and Prowse, 2015) . Given that diversified farms already have more diverse income sources, they are less likely to engage in risk management strategies (Loughrey, Donnellan, Hennessy andHanrahan, 2013). Another beneficial effect of diversification is that it helps to mitigate 'labour smoothening'

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problems which arise due to seasonality of pure agricultural operations (Bhaumik,2012). Thus, at the household level, occupational diversification may result in more income security but at the cost of a lower level of welfare and overall growth (Skoufias, Bandyopadhyay and Olivieri, 2015). Debt capacity can be achieved or improved through diversification of occupations. It can also act as collateral for sourcing loan and reduce the possibility of bankruptcy. This serves as an advantage for farmers who may find it difficult to access loan due to lack of guarantor and collateral. Also, when farmers have so many investments (income sources), they hardly go bankrupt.

Obviously diversification plays significant positive roles such as reducing the adverse effects of mismatch between uneven farm income streams and continuous consumption requirements, spreading out risks among variety of activities and creating employment opportunity (Manjur, Amare, HaileMariam and Tekle 2014). It can therefore be inferred from the foregoing that diversification offers opportunity for improving economic viability of many farm households by reducing their dependence on agriculture or production of primary subsidized agricultural commodities.

On the other hand, diversified farm enterprises are likely to have higher labour requirements, thus reducing the potential supply of labour to off-farm activities. Pluriactivity or diversification is positively associated with farm exit. Farmers with off-farm employment have reduced probability of having a farm successor. This suggests that pluriactivity or diversification is a short-term farm survival strategy and while it may prolong the farming life of the current generation, it does not guarantee the long-term sustainability of farming for future generation (Loughrey, Donnellan, Hennessy andHanrahan, 2013). However, contributions made by off-farm and non-agricultural sector to rural households is significant (Manjur, Amare, HaileMariam and Tekle 2014) to their overall wellbeing.

In as much as occupational diversification is the norm for rural households and individuals, there are factors that influence them to allocate their time, labour, money and other resources to different agricultural and non-agricultural occupations. Many experts pointed out that the existence of differences in livelihood choices participation varies from men and women (Manjur, Amare, HaileMariam and Tekle, 2014). They further stated that in general, bio physical or agro climatic condition is also found to influence households livelihood diversification strategies. The intensity of participation in some of the activities fluctuates in accordance with the household's sex and income status. Also, farmers have a number of livelihood diversification strategies available to them and choices of which livelihood to adopt depends on human, social and physical factors (Manjur, Amare, HaileMariam and Tekle, 2014). Suggesting that occupational diversification favours those already possessing the fixed assets, financial savings, skills, education and social contacts necessary to take advantage of emerging favourable opportunities.

Although, occupational diversification is inhibited by policy due to taxes, licences, roadblock, residence permits, poor extension contact, poor/lack of capital and land among others, diversification of income sources among individuals especially farmers in developing countries is still common and probably on increase. This necessitates the need to ascertain factors that

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influence occupational diversification among farmers in Benue State, Nigeria. Specifically**,** the study:

i described the socio-economic/institutional characteristics of the farmers;

ii. identified their areas of occupational entry;

iii ascertained difference between their farm and non-farm incomes ;

iv ascertained socio-economic/institutional characteristics that influenced their occupational diversification and

v ascertained their reasons and constraints to occupational diversification.

2. METHODOLOGY

Study area

The study was carried out in Benue State, which is one of the states in North Central geopolitical zone of Nigeria. The state lies between latitudes $6^0 25^{'}$N and $8^0 8^{'}$N and longitudes $7^0 4^{'}$E and 10^0E. It has a total land area of about 30,955 square kilometers and according to the result of the 2006 National Population Commission (NPC) census, it has a population of 4,219, 244. Administratively, Benue State is made up of twenty-three local government areas (LGAs). There are also three agro development zones in the state which are Zone A (Eastern zone) with 18 blocks, Zone B (Northern zone) with 13 blocks and Zone C (Central zone) comprising of 15 blocks.

The tropical climate of the state manifests in two distinct seasons. The rainy season that lasts from April to October and the dry season that lasts from November to March. Benue State is referred to as the food basket of Nigeria because of the abundance of its agricultural resources which invariably attracts farmers from other areas. Major crops grown in the state are yam, cocoyam, cassava, sweet potato, millet, groundnut, ginger, sugar cane, etc. Tree crops like oil palm and citrus are grown in the area while livestock, forestry and fisheries are also products of the area.. Economic activities of the inhabitants of the state include farming, trading and civil service.

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Population and Sample

The population of the study consisted of farming households in the state. From the three agro-development zones in the state, Proportionate sampling technique (Ladele and Chah, 2015) was used to select twenty five percent of blocks in each of the zones. Five, three and four blocks were then selected from zones A, B and C, respectively giving a total of twelve blocks. Three cells were randomly selected from each of the selected blocks (a block is made up of eight cells) using simple random sampling technique and giving a total of 36 cells. Twelve farming households were purposively selected (Ladele and Chah, 2015) from each cell. This gave a total sample size

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of four hundred and thirty two households. Heads of the selected households were interviewed but where the head of household could not be found, the next in seniority was interviewed.

Data collection

Data for the study were collected through the use of interview schedule and questionnaire (Issa, 2015) that were validated by researchers/academics in the field. Interview schedule was administered to illiterate farmers, while copies of questionnaire were distributed to educated farmers. They contained questions geared towards capturing the objectives of the study. The socio-economic characteristics of the respondents were achieved by collecting data on the following variables: age, sex, marital status, actual years spent in acquiring formal education, highest educational qualification, household size, farming experience, size of farm land owned and cultivated in hectare, membership of social/formal organization, extension contact (farm and non-farm), number of visits to a major city in the last one year (2010) (cosmopoliteness), annual income (in Naira) from farm and non-farm activities in 2010.

Respondents were also asked to indicate farm and non-farm occupations they had been engaged as at 2010. Some of these farm occupations included crop production, rearing of animals, processing of farm products etc while driving, hair-making, civil service/teaching etc were some of the non-farm occupations.

Reasons for occupational diversification among respondents were ascertained using a 3 point Likert type scale of not at all (1), to a little extent (2), and to a great extent (3) with a mean of 2. Some of the variables measured were: relatedness of activities, acquisition of formal education, job security, generation of more/extra income and others. Constraints to occupational diversification were ascertained using a four point Likert type scale of not at all (1), not serious (2), serious (3), and very serious (4) with a mean of 2.5. Some of the constraints captured were: unavailability of labour, poor formal education, health problem, old age, lack of capital/fund and others. Data on both reasons and constraints were further subjected to factor analysis in other to identify major reasons and constraints.

3. DATA ANALYSIS

Socio-economic/institutional characteristics and areas of occupational entry of the respondents were presented in percentage. Difference between farm and non- farm income was achieved with student t – test. Factors influencing occupational diversification(dependent variable) and socio-economic factors (independent variables) were ascertained with multiple regression. Age, sex, martial status, number of years spent in formal education, household size, farming experience, farm land owned, farmland cultivated in 2010, number of social organization , household size, number of extension contact, and cosmopoliteness were independent variables used for the regression equation.

The equation was represented thus;

$Y = a+b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + b_6 x_6 + b_7 x_7 + b_8 x_8 + b_9 x_9 + b_{10} x_{10} + b_{11} x_{11} + b_{12} x_{12} + u.$

Where y = number of occupational diversification areas.

a = constant term or intercept

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$b_1 – b_{12}$ = coefficient of the respective X dependent variables
X_1 = actual age of the respondents
X_2 = sex
X_3= household size (number of persons in the household)
X_4 = marital status (married = 1, single/divorced/or separated/or widowed = 0).
X_5 = years of formal education
X_6 = farming experience in years
X_7 =size of farmland owned (in hectare).
X_8=s 9ize of farm land cultivated in 2010 (in hectare)
X_9= number of membership in social/formal organisation
X_{10}= number of farm extension contact in 2010.
X_{11}= number of non- farm extension contact in 2010.
X_{12} = cosmopoliteness (number of visits to a major urban town in 2010)
U = error term
Data on reasons and constraints to occupational diversification were analysed using exploratory factor analysis with varimax rotation(Farinde and Alabi,2015). Variables with loadings less than 0.40 and those that loaded in more than a factor were dropped.

4. RESULTS AND DISCUSSIONS

Socio-economic characteristics of respondents

Data in Table 1 show that majority of the respondents (farmers) were males (86.8%) and married(89.6%). This may imply that there were more male than female headed farming households in the area and these heads of households were married. Also, greater proportion (47.5%) of them had household size of 6 to 10 persons, 29.6% had 1 to 5 persons while their mean household size was 9 persons. Iyiola-Tunji, Annatte, Adesina,Ojo, Buba, Nuhu,et. al.(2015) also found an average household size of nine persons among farm families in adopted villages of National Agricultural Extension and Liason Services (NAERLS) Nigeria. Generally, farmers especially rural/peasant farmers in developing world have large household size probably because these members provide labour for engagement in agricultural and non agricultural activities.

Table 1 also indicates tha[t majority(62%) of these respondents were at the age range of 31 to 60 years, 22.5% were within 51 to 60 years, while their mean age was 47.9years. These farmers were relatively young and at their productive age to handle tedious and onerous tasks in agriculture and outside this domain. In congruence, Adebisi-Adelani and Oyesola, (2014) found a mean age of 44.6 years among citrus farmers in Benue State, Nigeria.

About 30% of the respondents had secondary education, 28.9% had primary education while 22.7% had tertiary education. This means that majority (81.7%) of the respondents were literate. In support of this finding Haruna, Jamilu, Abdulahi and Murtala (2013) found greater proportion of farmers having secondary education and all being educated in their study on ownership and

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use of mobile phone among farmers in North Senatorial Zone of Kaduna State,, Nigeria. Acquisition of formal education makes individuals/farmers to be resourceful, innovative and less risk averse which makes them to adopt new and beneficial technologies and somehow monopolize emerging social and economic opportunities. For example, formal education can help farmers to engage in other activities apart from farm work like opinion leader, spokesman and other income generating activities that can boost their social and economic status.

The farming experience of the respondents as shown in Table 1 reveals that about 40% of them had 11 to 20 years of farming experience, 26.6% had 1 to 10 years, while their mean years of farming experience was 19.7 years. Generally, the farmers had long years of experience in farming. However, Eze (2013) found 21-30 years of farming experience among greater proportion of farmers in Ebonyi State, Nigeria. Consequently, (57.9%) of these farmers had 1.1 to 5 hectares of land, while 21.3% had more than 5 hectares of land . On average, the respondents owned about 4 hectares of land. However, 58.8% of these farmers cultivated 1.1 to 5 hectares of land, 26.6% cultivated a hectare or less while 14.6% cultivated more than 5 hectares. The mean size of land cultivated by the respondents was about 3 hectares. The findings show that the farmers owned relatively large farm land but did not cultivate the entire farm land they owned. Engagement in other occupations, practices of fallowing and shifting cultivation for the soil to regain its fertility may account for this. Contrarily, an average farm size of 1.2 hectares was cultivated by female household heads in rural communities of Osun State, Nigeria (Adesoji, Olanrewaju and Kolawole, 2014)

Greater proportion (55.0%) of the respondents belonged to 1 or 2 organizations, 29.4% did not belong to any organization while 15.6% belonged to 3 or 4 organizations. The mean number of social organization the respondents belonged to was approximately 1 (Table 1). These farmers may not have belonged to many associations because of poverty. Further, engagement in agriculture and probably in other economic activities may not afford them opportunity (time) to participate in many social organizations. Their membership in social organization may help in diffusion of innovation as well as exposing and linking them to other social and economic opportunities that will enhance their standard of living. Among these respondents that belonged to social organizations, greater proportion (55.1%) belonged to trading/artisan union, 50.5% belonged to farmers cooperatives, 32.9% belonged to religious organizations, 22.4% belonged to family/ community based organizations while only 1.2% belonged to political organizations. In most rural communities, membership in family/community organization is normally high contrary to what is obtainable in this finding. Also, they belonged to trading/artisan union more than other organizations including farmers cooperatives. This may suggest more interest of these farmers in trading and artisanship than farming. Membership of these farmers in political organization was almost zero which may be because they have poor educational qualification and resides in rural areas where political activities are likely to be low.

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Table 1: Percentage distribution of the respondents according to their socio- economics characteristics

Characteristics	Percentage(n=432)	Mean
Age (years)		
21-30	4.9	
31-40	22.4	47.9
41-50	39.6	
51-60	22.5	
>60	10.6	
Sex		
Male	86.8	
Female	13.2	
Marital Status		
Married	89.6	
Single	5.1	
Separated	0.9	
Widowed	4.4	
Educational qualification		
No formal education	18.3	
Primary education	28.9	
Secondary education	30.1	
OND/NCE	16.0	
HND/degree	3.9	
Higher degree	2.8	
Household size		
1-5	29.6	
6-10	47.5	
11-15	13.9	8
16-20	4.5	
>20	4.9	
Farming experience	26.6	
1-10		
11-20	39.4	
21-30	19.4	
>30	14.6	19.7
Size of farmland owned(ha)		

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≤ 1	20.8	
1.1-5	57.9	4.0
>5	21.3	
Size of farm land cultivated in 2010 (ha)		
≤ 1	26.6	
1.1-5	58.8	2.9
>5	14.6	
Number of social organization belonged to		
None	29.4	
1-2	55.0	1.34
3-4	15.6	
Organizational membership		
Farmers cooperatives	50.5	
Family/Community organization	22.4	
Religious organization	32.9	
Trade /artisan union	55.1	
Political group	1.2	

***Multiple responses**

Extension farm visit

Table 2 indicates that about 31% of the farmers had more than ten extension farm visits in a year, about 27.1% had 1 to 5, 22.7% had none while their average extension farm visit was 8 times .Thus, these respondents were not visited monthly by agricultural extension agents which showcase a true scenario of what is obtainable in many rural areas of developing countries, where this visit was rarely made probably due to logistic problems and shortage of agricultural extension agents. In line with this, Ogbeh, (2016) lamented that extension workers have almost disappeared in Nigeria as the country presently has an average of one extension worker to about 3,000 farmers. This visit will keep them abreast of new agricultural technologies and proffer solutions to problems they encounter in their farms for increased agricultural output. Consequently, Nigeria is currently in search of a tailor-made and homegrown agricultural

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extension system that will disseminate technologies, enhance good agricultural practices, and facilitate farmer education, adoption and utilization of local and transferred modern trends in agriculture (Nigerian Tribune, 2015).

Extension non- farm visit

Data in Table 2 show that greater proportion (38%) of the respondents had 1 to 5 extension non-farm visit , about 34% had no extension non-farm visit while on average, the farmers had about 5 extension non-farm visits anually. From the findings, the respondents had more extension farm visits than non- farm visits probably because extension work is more pronounced in agricultural matters especially in developing countries like Nigeria. These visits on non-farm matters are crucial because it may expose, link and consolidate efforts of these farmers in other remunerative activities probably in the non-farm sector that will increase their income and standard of living.

Number of visits to major cities/towns

About 46% of the farmers visited major towns/cities 1 to 6 times, 21.1% visited more than 12 times, 20.3% visited 7 to 12 times while the mean number of visits made by the respondents to major cities/towns yearly was approximately 9. Since traveling is part of education and the finding has shown that the respondents did not visit major cities/towns frequently, this may prevent them from keeping pace with useful information and innovation in the cities and entire world that they can apply in their farm and non-farm activities..

Table 2: Percentage distribution of respondents according to number of extension visits and visits to major cities/towns

Visits	percentage(n=432)	Mean
Extension visit (farm)		
None	22.7	
1-5	27.1	
6-10	19.0	8.3
>10	31.2	
Extension visit (non farm)		
None	33.8	
1-5	38.0	
6-10	17.1	4.7
>10	11.1	
Visit to major city/town		

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None	13.0	
1-6	45.6	
7-12	20.3	9.2
>12	21.1	

Respondents farm and non-farm occupational diversification
Farm Occupations

Entries in Table 3 show that majority(99.0%) of the respondents had diversified into crop production, rearing of animals (89.9%), marketing of agricultural products (79.1%) and preservation of agricultural products (70.8%). Normally, these occupations are common among farmers in rural areas They. may be said to be linked and complementary in such a way that production of crops will lead to rearing of animals where by the farmer feeds the animal with crop residue and in turn uses the droppings from the animal to fertilize the land for crop production. Many of them may not have diversified into processing of agricultural products(49.1%), lumbering (17.6%), hunting, (15.4%) and especially palm wine tapping (7%) because they require some informal skills and techniques which many of these farmers may not have acquired. Failure to acquire the skills and techniques associated to these occupations before moving into them may likely expose the farmers into risks such as accidents and death. Although, more than half of the respondents were not into processing of agricultural products, the multiplicative power of agro-processing is still glaring. This is because it is a major source of employment and income, thus providing access to food and other necessities to large groups of population which are essential elements in the attainment of food security goals (Ministry of Trade and Industry, 2016).

Non-farm occupations

Majority of the farmers had diversified into trading (65.5%) while small proportion of them had diversified into driving (25.2%), hiring out labour (15%), teaching/civil services (15%) commercial cyclist (11.8%), artisanship (5.8%) and load/bus assistantship (4.7%) as their non-farm occupations (Table 3). The respondents may have gone into trading because it is one of the easiest non- farm occupation one can go into with little or no formal and informal training .This finding also shows that most of these farmers have not diversified into many non- farm occupations especially in areas like load/bus assistance, artisanship, commercial cyclist among others probably because of capital, time, energy and skill required to embark on these occupations and because many of them were already diversified in the farm sector .This tends to support the fact that operators of more diversified farm businesses are less likely to engage in off-farm pluriactivity (Loughrey, Donnellan, Hennessy and Hanrahan,(2013).

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Table 3: Percentage distribution of respondents on occupations diversified as at 2010

*Occupations	Percentage (n=432)
Farm occupations	
Crop production	99.0
Processing of agricultural products	49.3
Preservation and/storage of agricultural products	70.8
Rearing of animals	80.9
Palm wine tapping	7.0
Marketing of agricultural products	79.1
Lumbering	17.6
Hunting	15.4
Non-Farm Occupations	
Driving	25.2
Commercial cyclist	11.8
Hiring out labour	15.0
Teaching/civil services	15.0
Trading	65.5
Artisanship	5.8
Land agency	6.1
Rental services	11.1
Load/bus assistant	4.7

***multiple responses**

Income of the respondents (Annual farm income, non-farm income and total income (₦))

It is evident in Table 4 that majority(63.2%) of these farmers earned more than ₦ 100,000 while the remaining percentage earned less annually from farming. The respondents' mean annual farm income was N305,543.3 .Entries in Table 4 also indicate that greater proportion (53.5%) of the respondents earned more than ₦100,000 annually while the remaining percentage earned less from non-farm occupations. Their mean annual non-farm income was ₦263,198.7 indicating that annual farm and non- farm incomes were relatively comparable. The table further shows that, about 33% of the respondents earned more than ₦ 500,000 while the remaining percentage earned less as their total annual income. Their mean annual total income was ₦ 555,412.56 (Table 4). Thus annual farm, non- farm and total income were relatively high. These incomes can serve as capital for engagement in many remunerative activities both in farm and non- farm sectors

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Table 4: Percentage distribution of the respondents according to their income

Income	Percentage (n=432)	Mean
Annual farm Income		
Th≤20,000	3.8	
20,001-60,000	15.9	
60,001-100,000	17.2	305,543.3
>100,000	63.2	
Annual non farm income		
≤20,000	7.7	
20,001-60,000	25.1	263,198.7
60,001-100,000	12.7	
>100,000	53.5	
Total income		
≤ 100,000	14.3	
100,001-300,000	28,7	555,412.56
300,001-500,000	23.8	
>500,000	33.2	

*** Multiple responses**

Difference between respondents farm and non-farm income

The result of t-test for the difference between respondents mean farm and non-farm income indicates that there was no significant difference in these two incomes (mean farm income = 280,791.39, mean non farm income = 230, 908.14) (t=1.35: P=0.18) (Table 5). Further interpretation of the result shows that the respondents earned the same income from farm and non-farm occupations irrespective of the fact that greater proportion of them engaged in farming as their primary occupation with trading as only non- farm occupation that majority of them had diversified. Thus pointing at the lucrativeness and importance of non- farm sector and the possibility of famers switching over to this sector entirely or making it their major occupation in near future. In corroboration with these facts, Loughrey, Donnellan, Hennessy and Hanrahan,(2013) asserted that farmers with off-farm employment have a reduced probability of having a farm successor. According to the authors, pluriactivity or occupational diversification is ashort-term farm survival strategy and while it may prolong the farming life of the current generation, it does not guarantee the long-term sustainability of farming for future generation. There is therefore the need to check mate diversification of income sources among farmers especially in the non-farm sector and strike a balance in such a manner that income from diversification in the non farm sector will be to augment income from farming and not to scrape farming as a livelihood strategy.

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Table 5: Test of difference between respondents farm and non-farm income

	Mean	t-value	Significant
Farm income	280,791.39		
Non-farm income	230,908.14	1.35	0.18

Determinants/factors influencing occupational diversification of farmers

Table 6 shows relationship between socio-economic/institutional factors and occupational diversification of farmers using multiple linear regression analysis. Specifically, years spent in formal education (t = 2.056; P = 0.040) and size of farm land owned (t= 2.069; P = 0.039) had significant relationship with occupational diversification of these farmers. This means that farmers that are educated are likely to engage in many occupations at the same time than the illiterate ones. This may be because the educated farmers are likely to be richer, better exposed and may have acquired more skills, techniques or competence to diversify their occupations than the illiterate ones. They also stand a better chance of capturing emerging and attractive opportunities because their diversification is likely to be as a result of favourable conditions (pull motives). This finding supports Pieniadz et al. (2009) who found a positive and highly significant relationship between the level to formal agricultural education and the degree of income diversification.

Land is a major factor of production especially in agriculture because every other factor like capital, entrepreneurship and production itself cannot be feasible without it. In rural communities of Nigeria land has some cultural connotations in the sense that it is not bought but transferred from generation to generation and inherited by only male members of the family. It also serves as basis for ranking members of the communities where ownership of more land puts a person in a higher status than a counterpart with a smaller land. It's significance as determinant of occupational diversification among these farmers is in order because it is expected that more land culminates to availability of land that can serve as location for citing new enterprise/s, more agricultural output/productivity and income that can form capital to be diverted to other economic ventures. In line with this finding, Ajani 2011 also found a significant relationship between size of farm land and occupational diversification among rural women in Anambra State, Nigeria.

Socioeconomic factors that did not have significant relationship with occupational diversification were: age (t = 0.593; P = 0.553), sex (t=- 0.886; P = 0.387), marital status (t= -0.684; P = 0.495), household size (t = -0.966 P = 0.335), years of farming experience (t = -0.435, P = 0.663), size of farm land cultivated (t =- 0.800; P = 0.424), number of social organization belonged to (t = 0.156; P = 0.876), extension farm visit(t=1.891;0.059), extension non farm visit (t= -1.429; P = 0.154), and visit to major town (t = - 0.991, P = 0.322). Contrary to this finding, one will think that some factors especially age and sex will serve as determinants of occupational diversification. This is because it is a known fact that young and male farmers tend to be more energetic, enthusiastic and enterprising to take up the option of occupational

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diversification as poverty alleviation strategy than old and female farmers. This finding, however disproved the notion with regard to the farmers in the study.

Table 6: Socio-economic factors influencing occupational diversification of farmers

Variables	Unstandarized coefficients		Standardized coefficients		
	B	Std. Error	Beta	T	Sig
Constant	6.772	0. 849		7.974	0.000
Age	-0.009	0.016	-0.037	-0.593	0.553
Sex	0.391	0.452	0.049	0.866	0.387
Marital status	-0.156	0.228	-0. 039	0.684	0.495
Years of formal education	0. 047	0.023	0.113	2.056	0.040
Household size	-0.027	0.028	-0.054	-0.966	0.335
Farming experience	-0.007	0.016	-0.028	-0.435	0.663
Size of farm land owned	0.098	0.047	0.146	2.069	0.039
Size of farmland cultivated	-0.049	0.061	-0.53	-0.800	0.424
Number of social organization belonged to	0.020	0.127	0.008	0.156	0.876
Number of extension farm visit	0.036	0.019	0.113	1.891	0.059
Number of extension non farm visit	-0.032	0.022	-0.082	-1.429	0.154
Number of visit to major town	-0.014	0.014	-0.054	-0.991	0.322

Dependent variable: Number of areas of occupational diversification

R Square 0.044, F-value = 1.609: $P \leq 0.05$\

R^2 adjusted = 0.017.

Factor analysis of reasons for occupational diversification among farmers

Three reasons (:natural (factor 1), institutional (factor 2) and capacity building (factors 3)).were extracted based on the item loadings as reasons for occupational diversification among farmers

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(Table 7). Specific factors that loaded high under natural/agronomic reasons were: relatedness of activities/occupations (0.41), unfavourable weather/climate change (0.72), lack/scarcity of fertile land (0.68), low agricultural output/yield (0.63), low price/profitability of agriculture products (0.59), shortage of farm labour (0.64), pests and diseases infestation on the farm (0.74), seasonality of farm activities (0.48) and incidence of natural disaster (0.73). Truly, uncertainties and risks associated with agriculture as a result of incidence of natural and other phenomena (push factors which are negative attributes or disadvantages inherent in agriculture) has made its profitability and sustainability as source of livelihood questionable. These have also served as reasons for occupational diversification among these farmers. In line with this Reardon et al (2006) have identified sharp seasonality in rain fed African agriculture while Carla and Edward (2009) indicated risks and insecurities inherent in farming as reasons why farmers diversify.

Acquisition of formal education (0.53), endowment (0.47), withstand shocks (0.50), favourable policy/law on occupational diversification (0.66), reinvest income/capital accumulated (0.57), family ties to the good/opportunity (0.52) and nearness to market (0.62) were factors that loaded high under institutional factors. Variables that loaded high under capacity building were: acquisition of skills/techniques informally (0.51), job security (0.40), increase in number of people in the household (0.58), ensure household food security (0.68), get members of household engaged/employed (0.53), increase in family responsibilities (0.70), linkage to other social/economic opportunities (0.62) and development of skill/competence in other activities (0.50).The finding tends to suggest that pull factors which are positive attributes/advantages motivated these farmers to diversify their income sources.

Holistically, it can be inferred from the study that both pull and push factors motivated these farmers to be pluriactive. According to Ranmuthumalie De Silva and Kodithuwakku, (2011**),** for better-off households, being pluriactive was initially due to push motives which have later been transformed into pull motives. In contrast, for worse-off households being pluriactive has always been a push motive. Thus, better-off households diversify into more off-farm income generation activities and hence depend less on agriculture than that of worse-off households who are mainly dependant on agricultural related diversification. This may further implies that the rich farmers that diversify their occupations due to pull factors are likely to engage in better economic activities, exhibit more entrepreneurial qualities that will help them extract values from the resources/environment and make more income than their counterparts who diversify their occupations due to frustration and desperation (push factors). Therefore for occupational diversification of farmers to contribute to sustainable growth and development of agriculture and economy at large it should be motivated by positive factors. Even those farmers that diversified due to negative factors should be able to attain a level where these challenges are overcome and further diversification prompted by positive motives like relatedness of activities (where production of cocoa leads to manufacturing of beverages).

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Table 7: Factor analysis of reasons for occupation diversification among farmers

	Natural /agronomic	institutional	capacity building
Relatedness of activities/occupations	0.410	-0.018	0.316
Acquisition of formal education	0.286	0.530	0.134
Acquisition of skills/ techniques informally	0.306	0.186	0.510
Natural endowment	-0.002	0.471	0.344
Reduction of risk associated with agriculture	0.105	0.314	0.201
Job security	-0.093	0.395	0.402
Increased number of people in the household	0.378	-0.092	0.575
Need for more/extra income	0.182	0.304	0.342
Unfavourable weather/climate change	0.720	0.121	0.063
Lack/scarcity of fertile land	0.676	0.153	0.032
Low agricultural output/yield	0.632	0.207	0.168
Low price/profitability of agricultural product	0.589	0.290	0.028
Withstand shock	0.296	0.495	0.123
Lack/low extension contact	0.441	0.485	0.059
Favourable policy/law on occupational diversification	0.251	0.663	0.123
To serve as collateral for sourcing loan/borrowing money	0.384	0.400	0.494
Ensure household food security	-0.084	0.247	0.681
Shortage of farm labour	0.644	0.061	0.306
Get member of household/engaged/employed	0.292	0.354	0.529
Increase in family responsibilities	0.177	0.191	0.696
Linkage to other social/economic opportunities	0.289	0.227	0.620
Pests and diseases infestation on the farm	0.738	0.177	0.126
Reinvest capital/income accumulated	0.120	0.568	0.330
Optimum full utilization of resources (e.g. land)	0.094	0.538	0.483
Family ties to the good/occupation	0.251	0.515	0.372
Debt alleviation (easy settlement of debt)	0.444	0.258	0.436
Sasonality of farm activities	0.482	0.104	0.374
Incidence of natural disaster	0.728	0.081	0.191
Nearness to market	0.015	0.621	-0.105
Develop skill/competence in other activities	0.051	0.079	0.501
Avoid over production of agricultural products	0.485	0.440	-0.007

Factors analysis of constraints to occupational diversification

Entries in Table 8 indicate that training (factor 1), security/logistic (factor 2), fund/infrastructural (factor 3), health (factor 4) and stress related problems (factors 5) were identified as factors that

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constrained farmers from diversifying their income sources. Poor skill acquisition (informal education) (0.85) and inaccessibility of profitable occupations (0.77) loaded high under (factor 1) as training related constraints to occupational diversification. The importance of education in diversification of income sources is glaring because farmers who are educated either formally or informally are more likely to experiment and take risks than the illiterate farmers. Education is therefore a pre-condition for innovativeness. However, the skills needed to engage in many rural on-farm (cultivation, fertilizer application, harvesting of crops etc), off-farm(processing, preservation storage and marketing of agricultural products) and non- farm activities (cobbling, masonry, water vending, hair plaiting etc) are simple and can be acquired informally. Unfortunately, farmers in Nigeria rarely enjoy formal and /or informal capacity building programme that will equip them with competencies to diversify and handle their primary and other secondary occupations well. Worst still informal training that is normally provided through extension activities are mainly pronounced in on-farm activities. There is also high farmer—extension ratio which is stated at 3000 farming families to one public extension agent as against the ideal number of 500 farming families to one extension agent (Oladele, 2015) .This high ratio makes it extremely impossible for agricultural extension agents to make the approved number of visits and teach/transfer skills, techniques and innovations to these farmers. Hence, many farmers lack formal and informal trainings on farm and non- farm matters that can help diversify their occupations.

Jealousy from friends/neighbours (0.65), satisfaction with income from one/primary occupation (0.70), exposure/attraction of robbery attack (0.62), existence of poor/ menial jobs in the rural area (0.74) and long distance between residence and place of activity/work(0.68) loaded high under security/logistic problems (factors 2). Ideally and conventionally, having/ moving into multiple occupations connotes additional or more income. When these income sources are not related and places of their activities are not located close to each other, farmers suffer additional stress of planning differently and moving from one location to another in order to work and/or monitor activities of these enterprises. Also, when diversification into different occupations boosts farmers income and consequently raises their levels and standard of living, this may subject them to insecurity issues like jealousy, poisoning, kidnapping/ abduction, theft/robbery and even death. Farmers in areas prone to these vices may be reluctant to boost their income even through diversification of income sources.

Variables that loaded high under fund/infrastructural problems (factor 3) were: expenses/charges per enterprise (0.57), lack of capital/fund (0.68), poor road network (0.74) and poor market/demand for the new good/activity (0.75). It is a fact that most rural areas of the world lack basic infrastructure while poverty is the characteristics of the inhabitants (farmers). Fund/capital is one of the factors of production and it's absence may delay or disrupt production activities. Unfortunately, many rural farmers had no access to credit, among those that had access to credit, majority got their credit through friends and relations (Akinnagbe and Adonu, 2014). When poor farmers lack access to credit especially from formal institutions, it may be difficult for them to make up capital that can be used for diversification of income

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sources. On the other hand obtaining credit or fund in form of loan from formal sources like banks requires collateral that poor farmers may not be able to provide thereby leaving them in a vicious cycle of poverty since credit constrained households are likely to fall below the poverty line (Obisesan and Akinlade,2013).

On the aspect of constraint associated with infrastructure, Duke and Tichareva, (2016) noted that when we talk of infrastructure development, agricultural infrastructure is often the least mentioned, if mentioned at all!. Consequently, agricultural industry is often viewed backwardly with most young men and women who often grow up in abject poverty in rural areas (Duke and Tichareva, 2016) with little or no hope of liberation via expansion or increasing their enterprises.

Loadings under health problem were: old age (0.85), sickness (0.83) and poor knowledge on importance and possibility of occupational diversification (0.48). Obviously, health is wealth. Also, health status of individual tends to degenerate with age especially when there is no proper health care or management. In Nigeria, an approach to health delivery scheme is still far from reality due to several underlying factors like poor funding, non participation of communities in health care programmes, poor personnel, lack of self sustenance and rural credit facilities (Nnabuihe, Etemike and Nwachukwu, 2015).The implication is that farmers in Nigeria who are mainly old and engage in tedious tasks may not enjoy health care facilities/programmes that will reinforce and keep them in a healthy condition for agriculture and involvement in other occupations.

Laborious nature of engagement in more than one occupation (0.70), difficulty in coordinating more than one occupation (0.70), exposure to health risk (0.61) and lack of chance/time (0.65) loaded high as stress related problems. Engagement in more than one occupation can be tasking especially for farmers in the rural areas that are middle and old aged coupled with the fact that agricultural activities in this area are not mechanized but characterized by drudgery. According to Njoki, (2015) Nigeria ranks 132 out of 188 countries surveyed on agricultural mechanization and farm sizes in Nigeria are so small that it is hard for individual farmers to own a tractor. Executing agricultural tasks manually can be strenuous and time consuming. Farmers are therefore constrained by lack of strength and time to incorporate other remunerative activities in their portfolio.

Table 8: Factor analysis of constraints to occupational diversification among farmers

Constraints	Factor 1(training problem)	Factor 2(security/logistic problem)	Factor 3(fund/infrastructural problem)	Factor 4(health problem)	Factor 5(stressted related problem)
lack/unavailability of labour	0.476	-0.178	0.046	0.608	0.184
Poor formal education	0.754	0.123	-0.064	0.428	0.121
Poor skill acquisition (informal education)	0.850	0.136	0.074	0.229	0.112

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Poverty	0.758	0.061	0.443	0.066	0.059
Inaccessibility of profitable occupation	0.767	0.058	0.288	0.152	0.148
Old age	0.259	0.214	0.191	0.851	.093
Health problem (sickness)	0.193	0.213	0.227	0.830	0.161
Poor knowledge of importance and possibility of oeccupational diversification	0.396	0.321	0.354	0.480	0.094
Expenses/charges per enterprise (e.g. tax, license)	0.167	0.299	0.573	0.100	0.278
Lack of capital/fund	0.332	0.159	0.681	0.156	0.167
Labourious nature of engagement in more than one occupation	0.173	0.359	0.236	0.149	0.704
Difficulty in coordinating more than one occupation	0.191	0.307	0.268	0.208	0.695
Exposure to health risk	0.102	0.371	0.286	0.332	0.607
Lack of chance/time	0.102	0.122	0.156	0.004	0.647
Poor road network	0.101	0.282	0.737	0.138	0.245
Poor market /demand for the new good/activity	0.090	0.181	0.747	0.188	0.245
Jealousy from friends and neighbours	-0.121	0.649	0.156	0.142	0.361
Satisfaction with income from one /primary occupation	-0.124	0.702	0.120	0.109	0.299
Exposure/attraction of robbery attack	-0.038	0.616	0.255	0. 113	0.391
Existence of poor/menial jobs in the rural areas	0.307	0.736	0.232	0.097	0.141

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Long distance between residence and place of activities/ work	0.115	0.681	0.246	0.342	0.052

5. CONCLUSION

The study concluded that the farmers were relatively young with large household size which when harnessed properly will provide labour for engagement in farm and non-farm occupations. They owned large land but did not cultivate the entire land they owned. This land can be deployed in other remunerative activities both in farm and non-farm sectors. Although the farmers had diversified their occupations mainly within the farm sectors, they earned the same income from farm and non-farm occupations. These two sectors are therefore important sources of livelihood of these farmers. Years spent in acquiring formal education and size of farm land owned determined or influenced occupational diversification of the farmers. Lack of training and infrastructure, insecurity, poverty among others constrained the farmers from diversifying their income sources.

6. RECOMMENDATIONS

Emphasis on farm extension services as seen in many developing economy like Nigeria should be eschewed. Advisory services especially in non-farm matters should also be provided by extension workers to farmers. This will provide motivation and knowledge on possibility and importance of diversifying income sources especially in the non- farm sector for improved income as well as overall growth and development of agriculture and nation.

Government should enact policies backed with programmes and projects on occupational diversification. With main objective of monitoring the trend of diversification of income sources among farmers in the non-farm sector. This is to avoid extinction of agriculture as a livelihood option and consequences of this loss to humanity, economy and the entire universe.

Government and non-governmental organizations should also provide assistance in form of incentives like capital and credit to the poor and vulnerable farmers. Undue protocol in assessing the aid should be avoided while adequate measures should be put in place to see that targeted beneficiaries assess these incentives at appropriate time in order to meet up with time sensitive agricultural tasks and retain farmers in the profession of agriculture

Formal and informal training/education should be provided to the farmers. This can be done through establishment of adult literacy and skill acquisition centers in rural communities as well as providing scholarship and study grants to farmers especially the indigent ones that have the capacity and interest to undergo formal training/education. In this way, farmers can acquire competence to diversify their income sources especially in those rare, unique and more profitable farm and non-farm occupations like virtual/ e-advertisement and marketing, value addition, industrialization, craftsmanship etc and ultimately better their living conditions.

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