PATTERNS AND DETERMINANTS OF LIVELIHOOD DIVERSIFICATION AMONG FARM HOUSEHOLDS IN ODEDA LOCAL GOVERNMENT AREA, OGUN STATE, NIGERIA.

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ABSTRACT

The study examined the patterns and determinants of livelihood diversification among farm households in Odeda Local Government Area, Ogun state, Nigeria. The study data was primary data obtained in a cross section survey of 70 randomly selected households drawn by a three stage sampling technique from 14 randomly selected farming villages in the study area. The data were obtained by personally administered questionnaire and was focused on the socio-economic characteristics of the farm households, the various income generating activities and income from all sources. The level of livelihood diversification was determined using Herfindahl index. The study data were analysed for each households by descriptive and regression (logit) techniques. Evidence from regression analysis shows that income from non-farm sources accounted for 37.1 percent of the farm households income. Only few (22.9 percent) farm households depended solely on only one source of income which was farming. Households of Divorcee tends to be significantly much diversified than the average of the sample while increase in education as well as farm income tends to lower the extent of livelihood diversification. Islamic adherent are less likely to have diversified income portfolios than their Christian counterpart. The results shows that low farm income is a critical factor encouraging livelihood diversification in the study area. Thus, policy aim at keeping farm households in Agriculture will need to focus on measure to raise their farm income.

Keywords: Livelihood diversification, Herfindahl Index, Farm Households, Farm Income

INTRODUCTION

Amidst high level of risk and uncertainty characterizing Nigerian agricultural sector, rural farm households are faced with issue of diversifying their source of livelihood as a means of reducing the negative impact that any single (farming) income source has on their welfare. The changing socioeconomic, political, environmental and climatic atmosphere in Nigeria and other developing countries across the globe has continued to aggravate the living conditions of most households especially those living in the rural areas. The accompanying increase in poverty levels has led residents of these economies to devise a number of strategies to cushion the negative effects of these changes. Meanwhile, there has been an increased recognition among researchers especially in the past one or two decades that farmers diversify

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their livelihood strategies, including on-farm (crop, livestock, fisheries) and off-farm activities or market and non- market activities, to mitigate risks inherent in unpredictable agro-climatic and politic -economic circumstances (Ellis, 1998; 2000).

Diversification is a rational response by households to lack of opportunities for specialisation, and was initially considered not the most desirable option. However, recent studies indicate that rather than promoting specialisation within existing portfolios or livelihood activities, upgrading them to augmenting income could be more realistic and relevant for poverty reduction (Ellis and Freeman, 2005; Freeman and Ellis, 2005).

Burgeoning literature on livelihood diversification across the developing world has pointed to the increasing role of non-farm incomes in poverty reduction (Bryceson, 1996). The rural economy is not based solely on agriculture but rather on a diverse array of activities and enterprises. Much recent thinking on this subject is based on the concept of 'livelihood diversification as a survival strategy of rural households in developing countries' (Ellis, 1999). Farming remains important but rural people are looking for diverse opportunities to increase and stabilise their incomes.

Most definitions of diversification in developing countries work on the assumption that diversification primarily involves a substitution of one crop or other agricultural product for another, or an increase in the number of enterprises, or activities, carried out by a particular farm, the definition used in developed countries sometimes relates more to the development of activities on the farm that do not involve agricultural production.

This research therefore examined the patterns and determinants of livelihood diversification in Odeda Local Government Area, Abeokuta, Ogun state. The study also determined the contributions or share of various livelihood activities to the farm households income in the study area. We look at the level of livelihood diversification and the factors influencing livelihood diversification in the study area.

METHODS

Primary data were used in this study. These were collected in a cross- section survey of farm households drawn by multi-stage sampling techniques from the study area. Questionnaire method was used to collect data on socio – economic characteristics of the households, the livelihood activities undertaken by the member during 2009/2010 farming season as well as the associated income among others.

Multi-stage sampling technique was used to select a cross section of 70 farm households from Odeda Local Government Area. 14 villages was randomly selected from the 860 villages in Odeda Local Government Area. 20% of residential buildings in each of the selected village was randomly selected, targeting an average of five residential buildings per village. One farm household was interviewed in each of the selected residential building targeting a total of 70 households.

Both quantitative (econometric) and descriptive techniques was employed to analyse the survey data. The socio – demographic characteristics of the farm households was analysed by descriptive technique, this include construction of frequency tables and charts. The livelihood activities engaged by the farmers was determined by ensuring that

each member of the farm household supply information on the type of activities during the 2009/2010 farming season and income generated. Descriptive technique including computation of mean, standard error and income share was employed in describing the contribution of various livelihood activities to the farm households in the study area. This was summarized on tables. The level of livelihood diversification was determined by computation of Herfindahl index which is defined as:

$$D = \frac{1}{\sum S_i^2}$$

-D = level of income diversification
Si = Share of income source i in households total income
$S_i = Y_i/Y$, $Y = \sum Y$
Yi = Total income from source i
Y   = total household income from all sources

Herfindahl index measures the level of diversification which is degree of concentration (scatteredness) of households income into various sources. Households with most diversified income will have the largest values of D. Households with less diversified income will have the smallest values of D. However, the least diversified household which are those depending on a single income source, D takes on its minimum value of 1. The higher the number of income source (s) and, or the more evenly distributed the income share, the higher the value of D.

The factors influencing the livelihood diversification was determine using Logit Regression model. The model is stated thus:

$$L_i = \frac{P_i}{Ln1 - P_i} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7$$

Where P_1= if diversified
         P_0 = if not diversified
The dependent variable is livelihood diversification
The independent variables are:
X_1 =   Age (years)
X_2 = Age^2 (years)
X_3 =   Sex (1 = male, 0 = Female)
X_4 =   Education (years)
X_5 =   Farm income (Naira)
X_6 =   Marital status (1 = Married,
              0 = Otherwise)
X_7 =   Religion (1=Christianity,
              0= Otherwise)

RESULTS AND DISCUSSION
Socio-economic Characteristics of the Farm Households
Socio-economic characteristics of the farm households are important factors directly and indirectly determining the extent of livelihood diversification in the study area. These include age, gender, marital status, educational status, household size among others and the results were summarized in tables 1. Table 1 shows the age structure of the respondents and the modal age group was 41 – 50 years with a frequency of 57.1% while 64.3% of the farm households were below the age of 50 years. This shows that majority of the farm households were in

their economically active years and hence can actively involved in livelihood diversification.

Gender is an integral and inseparable part or rural livelihoods. Many development projects have assumed that male headed households provide the majority of agricultural labour and is sole decision maker concerning agricultural activities. The table above reveals that 81.45 of the respondents were male. This is a clear indication that male dominate agricultural activities and engaged more in diversified livelihood activities in the study area.

The level of education of farmers is assumed to influence the level of awareness and ability to adopt innovation. However, the more education farmer has, the more likely he is to work off the farm. This is because he now prefer non – farm job and make farming a part – time secondary occupation. Moreover, 27.1% of the households had no formal education, 47.1% had primary education, 12.9% had secondary education while 12.9% had tertiary education. From the table above, it is seen that the literacy level of farm households were relatively low in the study area.

Marital status is an important factor determining the extent of livelihood diversification. Households that are married are more likely to have diversified income portfolios than unmarried farmers. This is due to the fact that married household heads have more responsibility than the unmarried ones. 87.15% of farm households were married showing that majority of the respondents were married and have families to cater for.

Households size also has both positive and negative effect on output. For instance, a larger households size may depend on more income generating activities for sustainable livelihood than a smaller households size. Hired labour will be minimized in larger households size. The modal household size was 5-6 persons. The table indicates that 25.7 percent had family size of 3-4 members, 54.3 percent had 5-6 family size, while 20.0 percent had 7 and above family size. This implies that members of the household can engage in one form of income generating activities or the other to make ends meet and would assist in providing family labour.

Furthermore, farm households engaged in various income generating activities which can be both farm and non-farm activities so as to make ends meet. The type of non-farm livelihood activities engaged by farm households greatly influence their participation in farming activities. Meanwhile, 58.6 percent of the households had farming as their primary occupation, this is in proper conformity with expectation since the study was directed to farm Households. 10.0 percent had artisanship, 20.0 percent had trading, 7.1 percent had paid employment and 4.3 percent had others activities as their main occupation respectively.

Religion status of farm households also influence the extent of livelihood diversification. The table above shows that 61.4 percent of the farm households were Christian while 37.1 percent of the households were Muslim. Thus, majority of the farm households are Christian.

Table 1: Demographic and socio-economic characteristics of the respondents

Variable	Frequency	(%)
Age group (years)		
30 and less	2	2.9
31 – 40	3	4.3
41 – 50	40	57.1
51 – 60	20	28.6
Above 60	5	7.1
Gender		
Male	57	81.7
Female	13	18.6
Education		
No formal	19	27.1
Primary	33	47.1
Secondary	9	12.9
Tertiary	9	12.9
Marital Status		
Single	8	11.4
Married	61	87.1
Widowed	1	1.4
Household size		
3 – 4	18	25.7
5 – 6	38	54.3
Above 7	14	20.0
Occupation		
Farming	41	58.6
Artisanship	7	10.0
Trading	14	20.0
Paid employment	5	7.1
Others	3	4.3
Religion		
Christian	43	61.4
Muslim	26	37.1
Others	1	1.4

Source: Field Survey, 2010

Patterns of Livelihood Diversification

Pattern of livelihood diversification shows the various income generating activities of farm households. Empirical evidence from a locations suggested that rural households do indeed engage in multiple activities and relied on diversified income portfolios. Most households diversification is not just non-farm but non rural in character. According to Ellis 2000, the common pattern of livelihood diversification is for very poor and the comparatively well off to have the most diverse livelihoods, while the middle ranges of income display less diversity. Therefore, table below shows the contributions of various livelihood activities to the farm households. Farm income accounted for 62.88 percent of the total households income while non-farm income generating activities (artisanship, trading, salary jobs, asset income, others sources) accounted for 37.11 percent of the total households income. This shows that majority of farm households in the study are more engaged in farming activities than non-farm activities.

Also, all the households were farmers, and out of the 70 farm households interviewed, 18.57 percent were engaged in Artisanship, 34.29 percent in Trading, 17.14 percent in Salary Job, 17.14 percent in Asset income, and 41.43 percent in other income generating activities (Contractor, Bore-hole drilling).

Table 2: Contribution of various income sources to Farm Households Income

Source of Income	Freq.	Percentage	Annual Income		Income Share(%)
			Mean	Std. Error	
Farming	70	100.00	148,780.00	7,807.97	62.88
Artisanship	13	18.57	23,977.14	7,523.66	10.13
Trading	24	34.29	30,222.86	7,279.66	12.77
Salary Jobs	12	17.14	17,828.57	5,032.52	7.53
Asset Income	12	17.14	5,942.86	1,677.51	2.51
Other Sources	29	41.43	9,871.43	2,009.91	4.17
All Sources	70	100.00	236,622.86	13,590.22	100.00

Source: Field Survey, (2010)

Level of Livelihood Diversification (D)

The measure of income diversification which takes into account the variations in the income shares is the inverse of Herfindahl index concentration. The upper limit for D depends on the number of income sources available and their relative shares. The higher the number of income sources (S) and/or the more evenly distributed the income shares, the higher the value of D.

The table below shows that 22.9 percent of farm households were not diversified (they depend on a single income source which was farming), 51.4 percent were moderately diversified (depend on two income sources) and 25.7 percent were highly diversified (more than two income sources). This im-

plies that majority of farm households in the study area have two or more income sources.

Table 3: Distribution of Farm Household Heads by Extent of Livelihood Diversification

Level of Diversification	Frequency	Percentage
Not diversified (HI=1)	16	22.9
Moderately diversified(1.0<HI<2.0)	36	51.4
Highly diversified (HI>=2.0)	18	25.7
Total	70	100.0

Source: Field Survey, 2010

Determinants of Livelihood Diversification

Logit Regression Model was used to determined the factors influencing livelihood diversification among farm households in the study area.

In the result, Farm Income was significant at 5%, the coefficient was negative implying that Farm Income negatively affects livelihood diversification. The higher the farm income of the farm households, the lower the level of livelihood diversification.

Primary, Secondary and Tertiary Education were significant at $p<0.01$, $p<0.05$ and $p<0.1$ respectively. The coefficients were negative implying that the higher the level of education, the lower the level of livelihood diversification. Education is important factor influencing the level of livelihood diversification. Educated households tend to have a sustainable livelihood, thus are less likely to diversify their livelihood.

Marital Status (Divorced) was significant at $p<0.01$ and the coefficient was positive, implying that households of divorcee tends to be significantly much diversified than the average of the sample.

Religion (Muslim) was significant at $p<0.1$ and it coefficient was negative, implying that Islamic adherent are less likely to have diversified income portfolio than their Christian counterpart.

This results concluded that low farm income is a critical factor encouraging diversification in the study area. Thus, policy aim at keeping farm households in agriculture will need to focus on measure to raise their farm income.

Table 4:   Logit Regression Model Results of the factors influencing Livelihood Diversification among Farm Households

Dependent Variable (D) = Level of livelihood diversification

Variables in Model	Coefficient (B)	Standard Error	Significant
Farm Income	-0.001**	.000	.016
Household Size	-0.199	.295	.500
Age	0.462	.449	.303
Age Square	-0.005	.005	.284
Gender is Male	18.996	4498.8	.997
Education Dummies		.	.
Primary	-5.609***	2.139	.009
Secondary	-4.556**	1.993	.022
Tertiary	-5.642*	3.147	.073
Marital Status Dummies		.	.
Married	35.507	10904.9	.997
Divorced	35.371***	1.533	.000
Widowed	34.412	.000	.
Religion Dummies			.
Islam	-2.072*	.000	.086
Traditional	-.122	.000	.

Source: Field Survey, (2010)

*,**,*** refer to significant at 10%, 5% and 1% respectively.

CONCLUSION

This study examined the patterns and determinants of livelihood diversification among farm households in Odeda Local Government Area of Ogun State. Descriptive analytical tools, Herfindahl index and logit regression analysis were used to analyse the data.

It was revealed that majority of the farmers an in their economically active years and have fairly large household sizes with the average size of about 6 people per household. Also, about 58.6% of the respondent made farming their primary occupation.

In addition, farm income accounted for 62.88% of the total household income while non – farm income (artisanship, trading, salary jobs, asset income and other sources) accounted for 37.11% of the total farm income and majority (51.4%) of the respon-

dents were moderately diversified i.e have two income sources.

The study therefore concluded that farm income is the most critical factor influencing livelihood diversification in the study area.

RECOMMENDATIONS

Government should put in place policy that will increase the level of literacy among rural farm households as this has influence on livelihood diversification.

Policy aim at keeping farm households in agriculture will need to focus on measures to raise farm income.

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