

DETERMINANTS OF LIVELIHOOD DIVERSIFICATION AMONG FARM HOUSEHOLDS IN AKAMKPA LOCAL GOVERNMENT AREA, CROSS RIVER STATE, NIGERIA

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ABSTRACT

The study examined the determinants of livelihood diversification of farm households in Akamkpa Local Government Area, Cross River State, Nigeria. The specific objectives were to describe the socio-economic characteristics of respondents in the study area, identifying the factors influencing farm household livelihood diversification as well as to identify the constraints to farm household livelihood diversification. A multistage sampling technique was used in sampling the respondents. A set of validated questionnaire were used to gather data for the study while a total of 60 respondents were selected. Data were analyzed with both descriptive and inferential statistics. The study revealed that the majority (60%) were female, aged 20-30years, married (46%) and literate. The majority of them had household size ranging from 4-7 persons, engaged in farming (61.7%) and diversified to non-farm income. The result also revealed that (70%) of the respondents did not have access to credit. The factors influencing livelihood diversification among the farm households were volume of credit received, household size, farm size and marital status.. More so, the major constraints to livelihood diversification among them were unstable electricity (78.3%), poor access to market (65%), insufficient market price of commodity (58.3%), inadequate access to loan (51.7%), inadequate skilled labour (51.7%), high cost of business premises (51.7%) and appreciation in tax rate (51.7%).. The study recommends improved access to credit and strengthening of the credit institutional arrangement to improve the livelihoods of rural households.

Key words: Determinants, Farm, Households, Livelihood, Diversification

INTRODUCTION

The agricultural sector is an important sector in the economy and other developing countries of the world. It contributes significantly to Gross Domestic Product and employs large proportion of labour force. In Nigeria, farming as a source of income has failed to bring about the enough income for farm households (Babatunde, 2013). This is due to the subsistence nature of agriculture, decline farm size, low level of produce turnout which characterize agricultural sector in developing countries (Oku, 2011; Asiga, 2013). Diversification refers to the pattern of individual's voluntary exchange of assets and their allocation of assets across various activities (on and off-farm) so as to achieve an optimal balance between expected returns and risk exposure conditional on the constraints they face (Dilruba & Roy, 2012). Diversification has two aspects, a shift away from agricultural activities and an increasing mix of income activities. These activities are mostly influenced by livelihood options available in the rural community. Livelihood diversification refers to the ways by which households raise income and reduce environmental risks. It embraces both on and off-farm activities. These activities are carried out to create extra revenue to enhance agricultural activities (Sekumade & Osundare, 2014; Babatunde & Saim, 2010). According to Ayantoye *et al.*, (2017), decisions on diversification can be seen as a coping strategy rather than alternative income opportunities. The share of income from non-agricultural sources gives leverage to the dwindling income from agriculture and considerably improves the livelihood of the rural dwellers (Ijaiya *et al.*, 2011).

In rural communities of Akamkpa Local Government Area, farm households produce cereals and tuber crops which have low economic returns and solely depend on rain fed agricultural production system (Reta & Ali, 2012). More so, owing to inadequate land resources and variability in rainfall patterns, the farm households are unable to meet the per annum household food requirement. Consequently, they have resorted to firewood selling, quarrying works, petty trading and handy craft (such as weaving, blacksmith) so as to supplement their primary sources of income, even though they are involved in various livelihood activities, their access to various income sources beyond agriculture vary. Moreover, their level of involvement in nonfarm and off farm activities is influenced by complex factors in Akamkpa. It is within this background that this study examines the determinants of farm household's diversification.

Theoretical Issues / Literature Review

The study considers several theories that guide livelihood diversification. These include: Household Economic Theory (Singh, 1986), Livelihood Approach Theory (Chambers and Conway, 1992) and Theory of Choice. The household theory regards farm households as production units that maximize satisfaction. This is achieved by bringing together time and other inputs to generate output, subject to price and resource constraints. According to the theory, diversification is a function of returns to labour from farm activities. The theory helps to examine household production and off-farm labour allocation decision. The livelihood approach theory approach has been used in studies relating to livelihood strategies, poverty and livelihood diversification. The theory states that “livelihood diversification is beneficial to the rural poor because it reduces risks and stabilizes income flow and consumption which lead to improvement in quality of life, wealth accumulation and food security”. The theory aids in the assessment of people’s livelihood assets. According to the theory of choice, diversification represents the initiative of selecting diversity over consistency (De Giorgi & Mahmoud, 2016).

According to Losch *et al.* (2012), on-farm diversification means ‘maintenance of diverse spread of crops and livestock production activities which are undertaken to generate income from production and livestock rearing.’ Ellis (2005) reported that the drive of diversification differs according to circumstance; from a wish to gather, invest, and the need to minimize risk. Barrett *et al.*, (2001) stated that more affluent farm households can look for diversification to encourage economic growth, while the less affluent farm households might need diversification to live on. Several studies have looked at the factors influencing livelihood diversification. Specifically, Ayantoye *et al.*, (2017) identified the factors to be gender, marital status, poverty status, primary occupation and membership of association. Similar study carried out by Ng’ang’a *et al.* (2011) reported that educational level has a positive correlation with diversified livelihood. Ibrahim *et al.*, (2009) reported that distance to market directly influence livelihood diversification while study by Birhanu and Getachew (2016) revealed that access to credit has a direct relationship with livelihood diversification. Kelechi (2014) also reported that age, household size, primary occupation, farm income, access to credit, experience and membership to cooperative society significantly influence farmer’s decision to embark on non-farm enterprise.

METHODOLOGY

This study area is Akampka Local Government Area. It is located between latitude 5°00' and 5°57' N and longitude 8.60' and 8°50'E, covering a land mass of 4,300 km². The area is bordered by Odukpani and Akpabuyo Local Government Areas to the West and South respectively, Biase and Yakurr Local Government Area to the Northwest, Ikom and Etung Local Government Area to the North, and the Republic of Cameroon to the west. The area is made up of ten (10) wards, thirty (30) clans and two hundred and sixty (260) villages created for political and administrative convenience. The major ethnic groups are the Ejagham and Dusauga Iyong Iyong, sharing a common cultural and ancestral heritage. The major languages spoken are Ejagham, and Iyongiyong languages. The people are mostly agrarian and produce crops such as cassava, yam, maize, cocoyam and palm produces as well as sea foods.

Multi-stage sampling technique was used to select the farm households. Stage 1 involved the purposive selection of Akampka Local Government Area in Cross River State, Nigeria. This was done based on observed prevalence of both on and off farm activities in the area. Stage 2 involved a random selection of four (4) communities from Akampka I and Akampka II (Awi, Mbarakom, Uyanga and Oban). Stage 3 involved a purposive selection of fifteen (15) farm households from each of the four villages. From the sample frame of registered farmers obtained from the Cross River Agricultural Development Project records; a total of sixty (60) respondents selected for the study. The data was obtained from primary sources. The primary data was obtained through structured questionnaire and household interviews. Data collected were analyzed using both descriptive and inferential statistics.

Model specification

The factors influencing livelihood diversification was analyzed using Logistic regression. Following Gujarati and Sangeetha (2007), the logistic (logit) probability function is represented as:

$$P_i = 1 / (1 + e^{-Z}) = f(Z_i) \dots\dots\dots (1)$$

$$\text{Log}(P/1-P) = f(Z_i) \dots\dots\dots (2)$$

But $Z_i = \beta X_i$

Therefore, $\text{log}(P/1-P) = (\beta X_i + U_i)$

Where:

y_i = connotes dependent variables

- β = estimated parameters
- x_i = vector of independent variables
- U_i = error term

$\text{Log}(P/1-P) = 1$, if farmers diversify to non-farm income, while

$\text{Log}(P/1-P) = 0$ if otherwise.

Implicitly, the model is stated as

$$Y = f(X_1, X_2, \dots, X_9, \epsilon_i) \dots \dots \dots (3)$$

Explicitly it was expressed as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \epsilon_i \dots \dots \dots (4)$$

Where:

Y = livelihood diversification (1 if diversify; 0 if otherwise).

X_1 = Sex (1 if male; 0 if female)

X_2 = Age (years)

X_3 = Education (years)

X_4 = Household size (number of persons)

X_5 = Farm size (ha)

X_6 = Primary occupation (1 if farming is primary occupation and 0 if farming is not)

X_7 = Amount of income received (₦)

X_8 = Marital status (1 if married; 0 if otherwise)

X_9 = Farming experience (years)

ϵ_i = Error term

RESULTS AND DISCUSSION

Socio- economic Characteristics of Respondents

A large proportion (60%) of the respondents were of the female gender, about 41.7% were involved in livelihood diversification, with a mean age of 25 years. More so, majority (53.3%) had Senior Secondary School Certification Examination (SSCE) level of education, 28.3% had tertiary education, while 18.3% had primary education, indicating that most of the respondents were literate. The level of education influences the kind of opportunities available to improve livelihood strategies, enhanced food security, and reduction in the level of poverty.

The result further revealed that a greater part (46.7%) of the farmers had family of 4-7 persons per household with an approximated mean of five persons per household. This indicates that the

respondents have a relatively large household size. A large proportion (70%) of farmers had access to credit while 51.7% of those who had access to credit received credit that ranges between ₦51000 - ₦100000. The approximated average credit received was ₦65,480.32. The study also reveals that half (50%) of the respondents source for credit from cooperative societies, 20% sourced from friends and family, while only 6.7% sourced from financial institutions. This implies that the source of credit was mostly from the informal sources. This suggests that commercial banks are less patronized for financial support for farming in the study area. This may be attributed to high interest rate and cumbersome administrative procedure on loan application and disbursement. Izekor and Alufohai (2010), noted that informal rural financial sources in Africa perform better than the formal system owing to the fact that most lending system cannot meet up with the objectives for which they were established.

In terms of type of credit accessed, the majority (63.3%) of the respondents revealed that they accessed credit for agricultural production, while 36.7% did not. Fifty-five percent of the respondents accessed credit for off-farm business while 45% did so for other reasons. Also, 30% accessed credit for household consumption while 70% did not. The study revealed that a greater part (61.7%) of the respondents engaged in farming, 31.7% were traders, while 6.7% were civil servants. Furthermore, only 67% of the respondents agreed not to have diversified to non- farm activities.

Table 1: Socio-economic characteristics of respondents (N = 60)

Variable	Frequency	Percentage
Sex		
Male	24	40
Female	36	60
Age		
15-20	11	18.3
20-30	25	41.7
30-50	24	40.0
Mean	29.83	
Marital Status		
Single	13	21.7
Married	28	46.7
Divorce	7	11.7
Widowed	12	20.0
Educational level		
FSLC	11	18.3
SSCE	32	53.3
Tertiary	17	28.3
Family size		
1-3	10	16.7
4-7	28	46.7
10-15	22	36.7
Mean	5.38	
Occupation		
Farming	37	61.7
Traders	19	31.7
Civil servant	4	6.7
Diversification to non-farm activities		
No	4	6.7
Yes	56	93.3
Access credit		
Yes	42	70

No	18	30
Credit for agricultural production		
Yes	38	63.3
No	22	36.7
Off-farm business		
Yes	33	55
No	27	45
Household consumption		
Yes	18	30
No	42	70
Source of credit		
Bank	4	6.7
Money lender	9	15.0
Cooperative society	30	50.0
Government loan	5	8.3
Friends and family	12	20.0
Amount taken		
Less than 31,000	11	18.3
31000-50000	16	26.7
51000-100000	31	51.7
>100,000	2	3.3
Mean	65480.32	

Source: Field survey, 2017.

Factors Influencing Livelihood Diversification

The study showed 75.6% accuracy in predicting the factors influencing livelihood diversification. The MacFadden R-square was 0.29, while the log-likelihood ratio (LR) test was significant at one percent. The average marginal effect was 0.502; this implies that on average, the probability of farmers diversifying their livelihood was 50%.

The results revealed that household size, farm size, amount of income taken and marital status influenced livelihood diversification. The model revealed a significant negative influence ($P < 0.05$)

between household size and livelihood diversification, with a marginal effect value of -0.0304, suggesting that farmers with large household size are likely not to diversify their livelihoods.

It was also observed that farm size positively determines ($P < 0.001$) the probability of livelihood diversification, with a marginal effect value of 0.0317. The amount of income and marital status also had a positive influence on livelihood diversification at 1% and 5% significance level respectively. The values of the marginal effect of the amount of income and marital status were $5.20e-07$ and 0.3746 respectively. The findings shows that a direct relationship exist between increase in amount of income, marital status and the likelihood of livelihood diversification.

Table 2: Factors influencing livelihood diversification

Variable	B	Marginal effect	Z-value	p-value
Sex	0.1902	0.3057	0.2953	0.7678
Age	0.0282	0.0045	0.9900	0.3222
Education	0.4208	0.0676	1.1507	0.2499
Household size	-0.1893	-0.0304	-1.9775	0.0480**
Farm size	0.1970	0.0317	2.8194	0.0048***
Occupation	0.0176	0.0028	0.0671	0.9465
Amount taken	3.2369e-06	5.20e-07	1.8577	0.0632*
Marital status	2.3306	0.3746	3.1815	0.0015***
Farming experience	0.0027	0.0004	0.0856	0.9318

Source: field survey data, 2017; ***, ** and *, Significant at $P < 0.01$, $P < 0.05$, and $P < 0.10$, respectively. B, Parameter estimate; SE, Standard error. log likelihood is -43.9493; MacFadden R^2 is 0.29; Average Marginal effect = 0.502, Number of cases predicted correctly =57(75.6%).

Problems Affecting Livelihood Diversification

Table 3 shows the constraints to livelihood diversification in the study area. The Table shows that unstable electricity (78.3%), poor access to market (65%), insufficient market price of the commodity (58.3%), inadequate access to loan (51.7%), inadequate skilled labour (51.7%), high cost of business premises (51.7%), appreciation in tax rate (51.7%) were the major constraints to livelihood diversification. The study agrees with that of Khatun and Roy (2012) who reported that lack of credit, lack of infrastructure, lack of awareness and training and poor asset base were the major problems to livelihood diversification. Similar studies by Ewebiyi and Meliudu (2013) have identified lack of infrastructural facilities, inadequate livelihood asset and poor transportation system as the constraints to livelihood diversification

Table 3: Problems to livelihood diversification

Variables	Agreed	Not agreed
Inadequate access to loan	31 (51.7%)	29 (48.3%)
Poor access to market	39(65.0%)	21 (35.0%)
Inadequate skilled labour supply	31 (51.7%)	29 (48.3%)
High cost of business premises	31 (51.7%)	29 (48.3%)
Insufficient market price of commodity	35 (58.3%)	25 (41.7%)
Gender issues	26 (43.3%)	34 (56.7%)
Appreciation in tax rate	31 (51.7%)	29 (48.3 %)
Unstable electricity	47 (78.3%)	13 (21.7%)

Source: Field survey, 2017.

CONCLUSION

The study revealed that household size, farm size, volume of credit received and marital status were the factors that influence livelihood diversification in Akamkpa Local Government Area. It was also revealed that, despite the problems encountered, greater part of the farmers has diversified into non-farm income activities. The study concludes that livelihood diversification among farmers is prevalent in order to cope with risk.

RECOMMENDATIONS

This study recommends that

- I. Credit access should be increased and credit institutions should be strengthened to make this development possible and improve the livelihoods of rural households.
- II. The key factors that negatively influence livelihood diversification such as household size should be addressed.
- III. Since farm size had a positive effect on livelihood diversification, it is suggested that farmers increase their farm size. More land can be allotted to the farmers at low cost by relevant authorities in charge.
- IV. Policies that would remove the identified problems to diversification should be put in place.

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