Livelihood Diversification among Poultry Farmers in Obio/Akpor Local Government Area, Rivers State

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ABSTRACT

This study examined livelihood diversification of poultry farmers in Obio/Akpor Local Government Area (LGA), Rivers state. The objectives of this study were to describe the socio-economic characteristics of the poultry farmers, describe the livelihood diversification pattern, estimate the determinants of livelihood diversification among poultry farmers and identify the constraints in poultry farming in the study area. With the aid of copies of structured questionnaire, data for the study were collected from 176 poultry farmers drawn from the study area using multi-stage sampling procedure. Data were analyzed using descriptive statistics and inferential statistics (mean scores and logit regressions). Result from the study showed that majority (84.7%) of the poultry farmers were males and most (49.4%) of the farmers were between the ages of 44-56yrs, most (75%) of the poultry farmers were married and that they were all educated as they had one form of formal education or the other. It was observed that majority (50%) of the poultry farmers had household size of 5-7 persons and that most (45.9%) of them had 1-5yrs farming experience. The study showed that 45.5% of the poultry farmers had income level of 41,000-80,000 Naira per month and most (59.7%) of them engaged in both farm and off-farm livelihood diversification pattern. The results also revealed that farm location (P-value = 0.021), poultry profit/annum (P-value = 0.001), income level (P-value = 0.042), access to market (P-value = 0.000) and age (P-value = 0.023) were statistically significant at 5% level; suggesting that they influenced livelihood diversification. Further, inadequate capital, pest and diseases, lack of information, high price of feeds, lack of credit facilities and availability/affordability of vaccines were considered as constraints in poultry farming in the study area. The study recommended that government should facilitate programmmes tailored at reducing the incidences of pest and diseases recorded in poultry farming as such, the risky nature of the enterprise will be minimized.

Keywords: Livelihood, Diversification, Poultry, Farmers

INTRODUCTION

Poultry farming in 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 labor force. In Nigeria, poultry farming as an only source of income has failed to bring about enough income for poultry farmers (Heise *et al.* 2015). Perhaps, this could be owing to the subsistence nature of agriculture, declining farm size, low level of produce turnout which characterize agricultural sector in developing countries. Diversification refers to the pattern of individual's voluntary exchange of assets and their allocation of assets across various activities so as to achieve an optimal balance between expected returns and risk exposure conditional on the constraints they face (Dilruba and 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. 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 (Etuk, *et al*., 2018),

Poultry farmers face several challenges, including low market demand, high production cost, disease outbreaks, and inadequate government support, among others; in addition, agricultural industry carries significant risks, including drought and climate change; as a result, impoverished rural households lacking essential assets may have to turn to non-farm activities that produce low returns and can be hazardous ((Mariano and Peralta, 2017; Loison, 2015). Diversity of income is a well-known and extensively researched phenomenon in rural Nigeria; to reduce the risks associated with unpredictable agroclimatic and political-economic conditions, should diversify their livelihood strategies, encompassing both on-farm (crop, livestock, fisheries) and off-farm activities, or market and non-market activities (Babatunde *et al.*, 2015). It is on this premise that the study was poised to examine livelihood diversification among poultry farmers in Obio/Akpor LGA, Rivers State.

Objectives of the Study

The broad objective of the study was to examine Livelihood diversification among poultry farmers in Obio/Akpor LGA, Rivers State. The specific objectives were to:

i. describe the socioeconomic characteristics of the poultry farmers in the study area;
ii. describe the livelihood diversification patterns of the poultry farmers;
iii. estimate the determinants of livelihood diversification among poultry farmers; and
iv. identify the constraints in poultry farming in the study area.

MATERIALS AND METHODS

The study was conducted in Obio/Akpor Local Government Area. Obio/Akpor is a local government area in the metropolis of Port Harcourt, one of the major centres for economic activities in Nigeria, and one of the major cities of the Niger Delta, located in Rivers State. The local government area covers 260km^2 and at the 2006 census held a population of about 464,789. Obio /Akpor has its headquarters at Rumuodomaya and it is peopled by the Ikwerre.

Survey research design was employed in the study and the population of the study consisted of 315 registered poultry farmers in Obio/Akpor Local government of Rivers State obtained from the Agricultural Development Programme in Rivers State. The population was a mixture of both boiler and layer enterprise farmers without any focus on a specific poultry enterprise. Using Taro Yamane formula (Yamane, 1973), the sample size for the study was limited to 176 farmers. The Taro Yamane formula is give as:

$$n = \frac{N}{1+N(e^2)} \qquad n = \frac{315}{1+315(0.05^2)} \qquad n = 176$$

Where:

n= sample size, N= sample population and e = margin of error

Furthermore, multi-stage sampling procedure was adopted in selecting the sample for this study. The first stage was the purposive selection of the seventeen (17) wards that made up Obio/Akpor LGA. This selection was based on the pilot survey carried earlier which showed that these wards have poultry farmers. In the second stage, based on the unequal population of the wards, random sampling was used to select 176 farmers across the 17 wards. The study used copies of structured questionnaires in the collection of data collection.

Objective (i) and (ii) were analyzed using descriptive statistics such as frequency count and percentages. Objective (iii) was analyzed using Logit regression model, and objective (iv) was analyzed using mean score from likert scale rating scale at criterion cut off mean of 2.50.

Model Specification (Logit Regression)

The dependent variable (Zi) is dichotomous and takes the value 1 for the diversified farmers and 0 for the non-diversified farmer (Awotide *et al.*, 2011). The model is given as:

$Zi = b_o + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 + b_7 X_7 + b_8 X_8 + b_9 X_9 + b_{10} X_{10} + U$

Where: Zi =Livelihood diversification status of the household (1=diversified, 0=otherwise)

X_1 = Sex (Dummy:1= Male; 0= Female)

X_2 = Age (years)

X_3 = Access to Market (sold directly =1, through 3rd party, agents/others = 0)

X_4 = Level of Education (Years spent in school)

X_5 = Household size (number of persons)

X_6 = Years of experience (years)

X_7 = Number of mortality/annum (%)

X_8 = Amount of Credit Accessed (₦)

X_9 = Poultry profit/annum (₦)

X_{10} = Farm location (Km)

U = Error term

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Poultry Farmers

The socioeconomic characteristics of poultry farmers in the study area are presented in Table 1.

Table 1: Frequency Distribution Table showing Summary Statistics of Poultry Farmers according to their Socio-economic Characteristics (n=176)

Variables	Frequency	Percentage (%)
Gender		
Male	149	84.7
Female	27	15.3
Age (years)		
18-30	9	5.1
31-43	71	40.3
44-56	87	49.4
57 and above	9	5.1
Marital Status		
Married	132	75

Single	36	20.5
Divorced	8	4.5
Educational Qualification		
No formal education	0	0
Primary education	27	15.3
Secondary education	44	25.0
Tertiary education	107	59.7
Household Size		
2-4	79	44.9
5-7	88	50.0
8-10	9	5.1
Above 10	0	
Farming Experience (years)		45.5
1-5yrs	80	45.5
6-10yrs	70	39.8
11-15yrs	26	14.8
16-20yrs	0	0
21yrs and above	0	0
Income Level (₦)		
10,000-40,000	18	10.2
41,000-80,000	80	45.5
81,000-120,000	52	29.5
Above 120,000	26	14.8
Total	**176**	**100**

Source: Field survey (2023)

Result from Table 1 shows that 84.7% of the poultry farmers were male, while 15.3% of the poultry farmers were female. This may be owing to the offensive stench from the bird droppings and that poultry farming is generally seen as energy sapping and therefore females shy away from it, leaving it in the hands of mostly males. This result conforms to the findings of Adesope *et al.* (2014) which stated that majority of the poultry farmers were males. Entries on age shows that 49.4% of the poultry farmers were between the ages of 44-56 years, 40.3% of them were between the ages of 31-43 years, 5.1% of them were between the ages of 18-30 years and 5.1% of them were between the ages of 57 years and above. This indicates that majority of the poultry farmers were between the ages of 44-56 years. It is believed that people within this age range (44-56 years)

have much responsibility, hence, they engaged in poultry farming in order to generate income to meet their responsibilities. This result disagrees with that of Etuk, Udoe and Okon (2018) which stated that majority of the poultry farmers were between the ages of 20-30yrs.

Furthermore, Table 2 shows that 75% of the poultry farmers were married, 20.5% of them were single and 4.5% of them were divorced. Entries on educational qualification shows that 59.7% of the poultry farmers had tertiary educational qualification, 25% of them had secondary educational qualification, 15.3% of them had primary educational qualification, while 0% of them had no formal education.This agrees to the observation of Adesope *et al.* (2014) which who found out that majority of their poultry farmers had tertiary educational qualification. Result on household size shows that 50% of the poultry farmers had household size of 5-7 persons, 44.9% of them had household size of 2-4 persons, 5.1% of them had household size of 6-10 persons, while none of them had household size above 10 persons. This indicates that majority of the poultry farmers had household size of 5-7 persons. The result also implies that the people in the study area had good experience in family planning; hence, they were able to control child birth and not having a large household size. This result agrees Agbugba *et al.,* (2023) and with that of Etuk, Udoe and Okon (2018) who stated that majority of the poultry farmers had household size of 5-7 persons. Table 1 also shows that 45.5% of the poultry farmers had 1-5 years farming experience, 39.8% of them had 6-10y years farming experience and 14.8% of them had farming experience of 11-15 years. The result suggests that poultry farmers in the study area, had good experience in poultry farming. This result conforms to the study of Adesope, Ekunwe and Familusi (2014) who mentioned that majority of the poultry farmers had good experience (1-10yrs) in poultry farming. In addition, Years ofexperience in agricultural production is handy in lowering risk suffered by farmers (Amadi-Robert *et al.,* 2023). Finally, Table 1 shows that a majority of 45.5% earned 41,000-80,000 Naira per month which suggests that poultry farmers in the study area were high income earners.

Livelihood Diversification Pattern of the Poultry Farmers

This part of the study is important as it describes the poultry farmers' pattern of livelihood diversification in Obio/Akpor LGA of Rivers State and the result is presented in Table 2.

Table 2: Livelihood Diversification Pattern of the Poultry Farmers

Variables	Categories	Frequency	Percentage (%)
Livelihood diversification pattern of the respondents	No diversification	0	0
	Farm to farm diversification	35	19.9
	Diversification to off-farm	36	20.5
	Diversification to both farm and off-farm	105	59.7
	Total	**176**	**100**

Source: Field survey (2023)

The result in Table 2 shows that 59.7% of the poultry farmers adopted both farm and off-farm diversification pattern, 20.5% of the poultry farmers adopted the livelihood diversification from farm to off-farm pattern and 19.9% of them adopted the farm to farm livelihood diversification pattern. This implies that majority of the poultry farmers diversified the source of livelihood using both farm and off-farm pattern. This indicates that most of the sampled poultry farmers engaged in other agricultural activities (apart from poultry) as well as other businesses outside the farm. This could be as a result of the ever increase in the price of foods and other things in the area, thereby increasing the level of responsibilities saddled on the responsibilities, consequently they engaged in different businesses in order to increase their incomes and in turn tackle their responsibilities.

Determinants of Livelihood Diversification among Poultry Farmers

Table 3 contains the result on determinants of livelihood diversification among poultry farmers obtained from the logit regression analysis.

Table 3: Logit Regression Showing the Determinants of Livelihood Diversification

Variables	Coefficients	Standard error	Df	P-value
Gender of the respondents	-.542	.764	1	0.478
Age	-1.694	.744	1	0.023
Marital status	-.707	.521	1	0.175
Educational qualification	.022	.399	1	0.957
Household size	.759	.479	1	0.113

Farming experience	-.509	.721	1	0.480
Income level	1.170	.576	1	0.042
Access to market	0.185	0.027	1	0.000
Farm location	0.153	0.066	1	0.021
Number of mortality	-0.097	0.129	1	0.454
Poultry profit/annum	0.378	0.063	1	0.001

cox & snell R squared = 0.048, number of cases predicted correctly = 153 (86.9%), Likelihood Ratio Chi^2 = 8.628, and Prob. (Chi^2) = 0.281

Source: Researcher`s computation from SPSS (2023).

From Table 3, the result showed 86.9% accuracy in predicting the factors determining livelihood diversification. The cox & snell R-squared of 0.048 showed that 4.8% change in the dependent variable was explained by the predicting variables. The value of the likelihood ratio chi-square was 8.628 and the P-value was 0.281, greater than 0.05 level of significant. This suggests that the model is not of good fit. In another light, farm location (P-value = 0.021), poultry profit/annum (P-value = 0.001), income level (P-value = 0.042), access to market (P-value = 0.000) and age (P-value = 0.023) were statistically significant at 5% level of probability; therefore, they influenced livelihood diversification. However, gender, household size, educational qualification, income, marital status and number of mortality did not significantly determine livelihood diversification as they had P-value more than 0.05. However, gender, household size, educational qualification, income, marital status and mortality did not significantly determine livelihood diversification as they had P-values more than 0.05 probability level. The result further shows that, income level, access to market, farm location and poultry profit/annum had a direct significant relationship with the likelihood of livelihood diversification.

Constraints to Poultry Farming

The constraints to poultry farming in the study area are presented in Table 4 below..

Table 4: Constraints to Poultry Farming

Constraints	**SA (4)**	**A (3)**	**D (2)**	**SD (1)**	**Total score**	**Frequency**	**Mean**
Inadequate capital	96	80	0	0	624	176	3.55
Pest and diseases	96	80	0	0	624	176	3.55

Lack of information	44	123	9	0	563	176	3.20
High price of feeds	36	131	9	0	555	176	3.15
Lack of credit facilities	9	140	27	0	510	176	2.90
Availability and affordability of vaccines	18	61	97	0	449	176	2.55

Source: Field survey (2023)

The constraints to poultry farming in the study area as identified by the poultry farmers were ranked in Table 4. The result shows that the farmers agreed to all the factors to being a constraint as the factors all had mean scores greater than 2.50. This implies that inadequate capital, pest and diseases, lack of information, high price of feeds, lack of credit facilities and availability/affordability of vaccines were seen as constraints in poultry farming. This result conforms to the observation of Opute *et al.* (2020) who stated that high cost of feeds and inadequate funds were the major constraints to poultry production.

CONCLUSION AND RECOMMENDATION

The study concludes that inadequate capital, pest and diseases, lack of information, high price of feeds, lack of credit facilities and availability/affordability of vaccines were major constraints to poultry farming and that the socio-economic characteristics of the poultry farmers had no significant effect on livelihood diversification. Also, household size, educational qualification, income and marital status did not significantly determine livelihood diversification in the study area.

Based on the findings reached, the study recommends that:

1. Government should facilitate programmmes tailored at reducing the incidences of pest and diseases recorded in poultry farming as such, the risky nature of the enterprise will be minimized.
2. Government should promote the more production of feeds and other essential inputs in poultry farming and as well encourage the reduction in their prices so that farmers can make more profit as the cost of feeds serves as a major constraint in poultry farming.

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