

Full Length Research Paper

Factors influencing poultry farmer's behaviour on record keeping in Akwa Ibom State, Nigeria

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Received 15 February, 2024; Accepted 28 March, 2024

The study investigated the factors influencing poultry farmer's record-keeping behaviour in Akwa Ibom State, Nigeria. A well-structured questionnaire was employed to solicit information from 150 poultry farmers using a three-stage sampling technique. The research employed descriptive statistics and Probit regression. Research results revealed that the majority (72.7%) of poultry farmers were male, having the age range of 20 to 30 years (34.6%), about 51.3% were married with an average of 4 persons per household and 59.9% attained tertiary education level. Furthermore, the probit regression result revealed that educational level, difficulty in keeping records and cooperative membership were the factors influencing record-keeping behaviour among poultry farmers. One among other recommendations from this study is that policymakers should implement educational programs to enhance poultry farmers' understanding of innovations and improve their record-keeping behavior.

Key words: Behaviour, poultry farmers, Probit model, record keeping.

INTRODUCTION

Chicken, a type of poultry, is a significant provider of affordable eggs and meat, both of which are rich in protein (Izuaka, 2021). Poultry farming is more efficient in transforming feed into eggs and meat than other livestock businesses. Furthermore, the various aspects of poultry farming, including egg production and the sale of chicks and pullets, can provide additional income for farmers (Udoka et al., 2019). Given the ecological, economic, social and health advantages of poultry meat over the other types of meat (red meat) and the continuous rise in the cost of production of cattle, sheep and goat meat

consumer preferences have been shifted now for poultry meat (white meat) (Adedapo and Adekunmi, 2019). Given these merits in the enterprise, a little effort has been displayed by farmers towards the enterprise especially in the aspect of keeping farm records which is an integral part of farm management (Adisa et al., 2017). Farmer's behaviour towards farm management as a whole in food production is always weighed with the turnover in the short run and ultimately with greater percentage of efficiency in the long run (Pan et al., 2021). Among others, poultry farmers make decisions based

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on intuition and not from record books making the decisions to be guided by vague estimates and guesses (Adisa et al., 2017). Some of the farmers keep some records they feel are important to them neglecting other types of records. Adedapo and Adekunmi (2019) reported that poultry farmers in the study area kept production, financial and inventory records only with production records as the most preferred record kept. Owiny (2019) revealed that respondents kept production/output, cash sales and general expenses records. Muhammad et al. (2020) put forward that respondents in the study area kept production, financial, inventory and labour records. Ishola et al. (2020) reported that poultry farmers in the study area kept different types of records but sales and production records were kept seldomly. Poultry farmers also behave differently when it comes to frequency of keeping records. Because of this, there is a need to investigate the factors that influence poultry farmer's behaviour in order to recommend an effective policy.

REVIEW OF RELATED LITERATURE

The Theory of Planned Behaviour (TPB) serves as a cornerstone in understanding the determinants of farmers' behaviour towards farm record keeping. According to Lamorte (2019), TPB suggests that an individual's behavioural interaction is a direct function of their attitude, social norms, and perceived behavioural control. This theory is built on four constructs:

- (1) Behavioural Interactions: These are the motivational factors that influence behaviour. The likelihood of performing a behaviour hinges on the strength of the intention to engage in it.
- (2) Attitude towards the behaviour: This refers to the individual's evaluation (positive or negative) of a particular thing, which in turn shapes their behaviour towards it.
- (3) Subjective norm: This construct encapsulates the social pressure to engage or not engage in a given behaviour.
- (4) Perceived behavioural control: This explores how an individual perceives the ease or difficulty of performing the behaviour of interest.

In the context of poultry farming, the decision to practice farm record-keeping is influenced by the perceived benefits of adopting such practices (Bechini et al., 2020).

Several studies have shed light on the factors that promote regular record keeping among poultry farmers. For instance, Adedapo and Adekunmi (2019) found a positive correlation between the level of education of poultry farmers and their propensity for regular record keeping. This finding aligns with the assertion of Bukunmi and Yusuf (2015) that education equips poultry farmers with the knowledge to understand new innovations and

make sound economic and managerial decisions based on farm reports. Moreover, an increase in years of farming experience was identified as another factor that could enhance regular record-keeping and managerial decision-making. This suggests that as farmers gain more experience, they become more aware of the importance of keeping records, thereby improving their record-keeping practices.

However, it is not all positive. Some factors negatively influence farm record keeping. For example, Muhammad et al. (2020) reported that as farmers age, their enthusiasm for keeping records wanes. Similarly, Uche (2012) found that inadequate educational levels contribute to poor record-keeping behaviour among farmers. Furthermore, external factors such as lack of awareness, time constraints, problems of mixed enterprises, and lack of interest were reported by Uche (2012) to negatively influence farm record keeping. Minna-Eyovwunu et al. (2018) echoed this sentiment, particularly highlighting the impact of time constraints on proper record keeping.

Lastly, the farm status (subsistence or commercial) of the farmer can also hinder them from keeping farm records. Dudafa (2013) noted that the subsistence nature of production by some farmers does not allow for market surplus, and hence, there is no perceived need for record keeping.

In conclusion, the record-keeping behaviour of poultry farmers is influenced by a myriad of factors, ranging from personal attributes such as education level and farming experience, to external factors like time constraints and farm status. Understanding these factors is crucial in promoting better record-keeping practices among poultry farmers.

METHODOLOGY

Study area

Akwa Ibom State was created on September 23, 1987, situated between longitudes 7°30' and 8°20'E and latitude 4°30' 5°30'N with a total area of 7,245,933 km², a shoreline of 12 km and an estimated population of 5,482,200 (NPC, 2006). The map of Akwa Ibom State (Figure 1) roughly represents a triangle; it is bounded to the West by Rivers and Abia states, Cross River State to the East and the Atlantic River on the South-southern Nigerian coastal plain. Akwa Ibom people are farmers, craftsmen, and merchants. Majority of the rural population engage in farming. Other traditional occupations of the people are fishing, trading, hunting, woodcarving, raffia works, tailoring, and craft creation. The state has six (6) Agricultural Development Programme (ADP) zones, namely: Uyo, IkotEkpene, Oron, Abak, Eket, and Etinan.

The study was conducted in Ikot Ekpene Agricultural zone (Figure 1). Ikot Ekpene also known as The Raffia City is historic town in south-southern state of Akwa Ibom. The town is located on the A342 highway that parallels the coast between Calabar to the Southeast and Aba to the West, with the state capital Uyo, on this road just to the East. Umuahia is the next major city from the north (Udoudo and Ekpenyong, 2013). Ikot Ekpene Agricultural Zone consist of five Local Government Areas and they are: Ikot Ekpene,

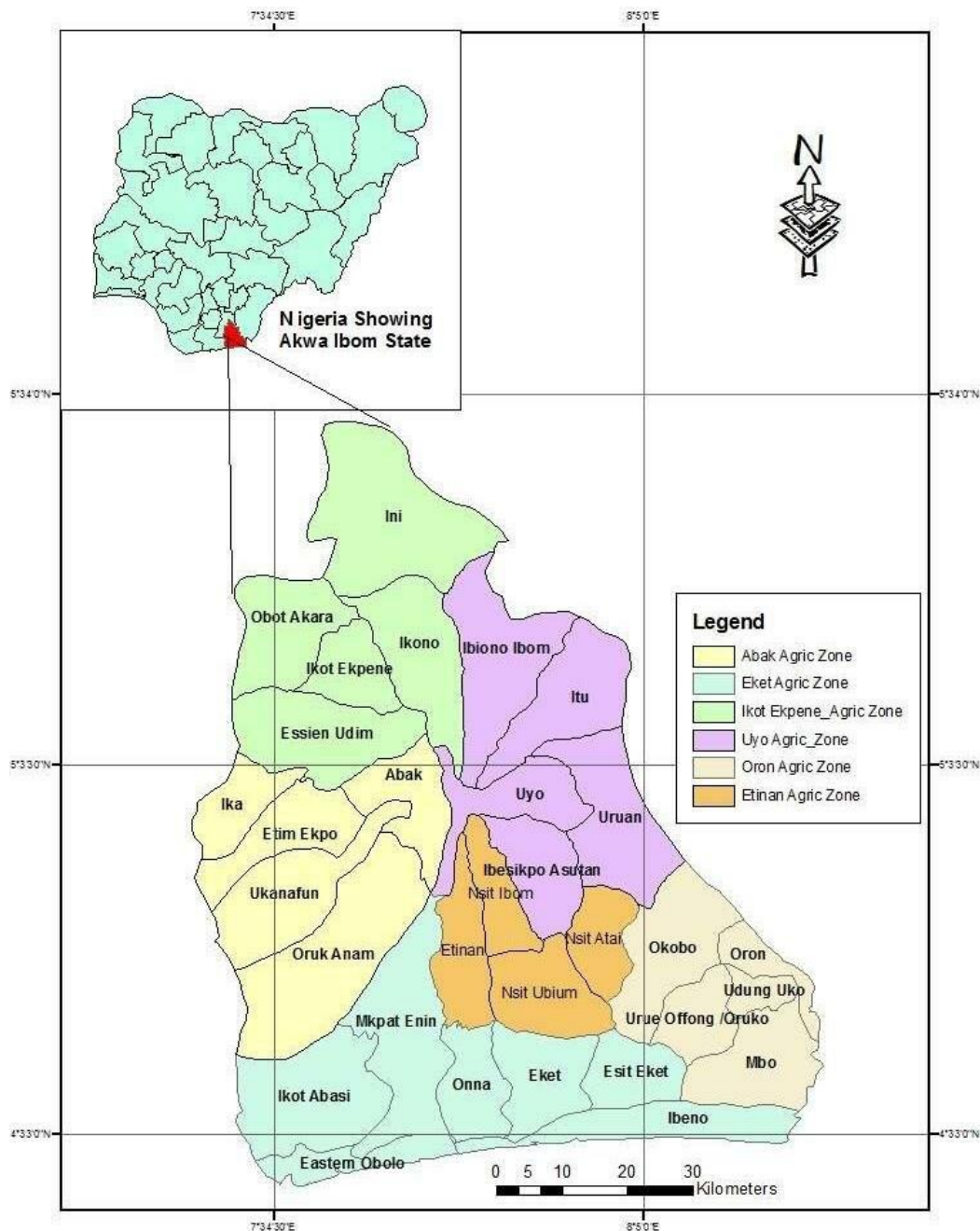


Figure 1. Map of Akwa Ibom State showing Ikot Ekpene Agricultural zone Nigeria.
Source: Akaninyene and Ngozi (2022).

Ikono, Ini, Essien-Udim and Obot-Akara. The head quarter of the zone is at Ikot Ekpene local government area and is situated at latitude 5.18° north and longitude 7.71° east. The zone has a humid tropical climate, characterized by distinct wet and dry seasons. Annual rainfall varies from 20 to 374 mm with an annual average of 354 mm. The average annual temperature ranges from 25.10 to 27.9°C. The relative humidity remains at an average of 70 to 80% throughout the year. The average sunshine revolves around 1,450 h per year and the annual evaporation rate ranges from 1,500 to 1,800 mm (Udoudo and Ekpenyong, 2013). Subsistent agriculture and crafts are the main occupation of the people.

Sampling technique and size

A total of one hundred and fifty (150) respondents from five (5) Local Government Areas which makes up Ikot Ekpene Agricultural Zone in Akwa Ibom State (Figure 1) were selected. The Local Government Areas includes Ikot Ekpene, Ikono, Ini, Obot Akara and Essienudim. Using a well-structured questionnaire, a multi-stage sampling technique was employed to get information used in this study. In the first stage, from the eight (8) agricultural extension blocks in Ikot-Ekpene agricultural zone, five (5) agricultural extension blocks were purposively selected. This was because

farmers in poultry production were prevalent in the selected extension blocks. The second stage involved the use of random sampling technique to select three (3) cells (circles) from each of the selected extension blocks. A total of fifteen circles were randomly selected from the five agricultural extension blocks selected. Finally, from the fifteen circles, one hundred and fifty (150) poultry farmers were sampled using snow-ball sampling.

From the structured questionnaire, information such as personal and farm characteristics of respondents as well as factors influencing farm record keeping behaviour among the respondents were collected. Data collected was subjected to both descriptive and inferential statistics. Descriptive statistical tools such as frequency table, percentages, mean score was used while the inferential statistical tool involved was Probit model.

Method of data analysis

In estimating factors influencing farm record keeping behavior, Probit model was used. The explicit form of the model is given as:

$$Y = \frac{p}{1-p} = \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_i \quad (1)$$

where Y = dependent variable which takes the value of 1 if a poultry farmer keeps record and 0 if he/she does not, β = parameter estimate, X_1 = educational level, X_2 = difficulties in keeping record, X_3 = cooperative membership, X_4 = extension visit, and e_i = the error term.

RESULTS

Socioeconomic characteristics of the respondents

Table 1 shows that 72.7% of the respondents were male and 27.3% were female. A greater percentage in the study area fell between the ages range of 20 to 30. On the marital status, it is shown that 42% were single, 51.3% married and 6.7% divorced. This iterates that the majority of the poultry farmers were married. The results of the household size show that 27.3% of the respondents had a household size ranging from 5 to 8 members and 72.7% had household size ranging from 1 to 4 members. This shows that majority of the household had 1 to 4 members. About 58.7% had farming experience of 1 to 4 years, 39.4% has experience of 5 to 10 years and 2.0% had over 10 years' experience. It is observed that the majority of the poultry farmers in the study area had 1 to 4 years' experience. The result on educational qualifications reveals that 23.3, 16.7, 4.6, 15.3, 29.3, and 10.7% of the respondents had B.Sc, HND, NCE, OND, SSCE and Primary Education, respectively. Apparently, it could be seen that 59.9% of the respondents attended tertiary institution. It is revealed that majority of the respondents (53.33%) had an annual farm income of two hundred and ten to five hundred thousand (210,000 - 500,000), 33.33% had five hundred and ten to eight hundred thousand (510,000 - 800,000), 4.67% had eight-hundred and ten thousand and above (>810,000) and 3.33% had an annual farm income lesser

than two hundred thousand (<200,000).

Factors influencing farm record keeping behaviour among poultry farmers

To identify factors influencing farm record keeping behaviour of poultry farmers in the study area, a probit regression model was used and the result is presented in Table 2. Table 2 shows the estimated probit regression model which gave the pseudo-R-square of 0.4162, the log likelihood statistics (-44.61597). The findings revealed that out of the four (4) explanatory variables that were included in the model, three (3) variables were significant in explaining the factors that influenced farm record keeping behaviour among poultry farmers. These were educational level, difficulty in keeping records, and cooperative membership. The findings revealed that the coefficient of educational level is positive and significant at 1% level. Difficulties experienced during keeping of farm records had a positive coefficient and was significant at 1% level while cooperative membership had a positive coefficient and was significant at 1% level.

DISCUSSION

In respect to gender, the result from this study showed that poultry farming in the study area is mainly dominated by male farmers. Ishola et al. (2020) in their report on factors influencing choice of farm records and accounting among youth poultry farmers in Lagos State, found out that poultry production is mainly dominated by male farmers just like other agricultural enterprises. The majority of farmers' age fell between 20 and 30 years, the study area implies that these farmers are still young and active and that they are capable of taking more risks as it concerns poultry farming. On the marital status, most farmers were married implying that these married individuals are believed to be more responsible. This finding corroborates the findings of Ishola and Shopitan (2015) who found that the majority of those involved in poultry production in the rural communities of Lagos State are married. Having a smaller household size will not enhance the availability of family labour, drawing strength from the findings of Suleiman et al. (2017), which revealed that a having large household size (4 - 6) enhances family labour availability. It is observed that the majority of the poultry farmers in the study area had between one and four years of experience. Furthermore, 59.9% of the farmers attended tertiary institutions. This implies that most of the poultry farmers were literate, and their level of literacy is expected to influence their ability to keep farm records (Adedapo and Adekunmi, 2019). On average, poultry farmers' annual income was between N210, 000 and N500, 000 implying that poultry enterprise is profitable.

Table 1. Socioeconomic characteristics of poultry farmers in the study area.

Category	Frequency	Percentage
Gender		
Male	109	72.7
Female	41	26.3
Total	150	100
Age		
20 - 30	51	34.6
31 - 40	42	27.7
41 - 50	35	23.5
51 - 60	17	12.7
61 and above	2	1.4
Total	150	100
Marital status		
Single	63	42.0
Married	77	51.3
Divorced	10	6.7
Total	150	100
Household size		
1 - 4	109	72.7
5 - 8	41	27.3
Total	150	100
Farming experience (years)		
1 - 4	88	58.7
5 - 10	59	39.4
Over 10	3	2.0
Total	150	100
Educational level		
B.Sc	35	23.3
HND	25	16.7
NCE	7	4.6
OND	23	15.3
SSCE	44	29.3
Primary	16	10.7
Total	150	100
Annual farm income		
Less than 200,000	5	3.33
201,000 - 500,000	80	53.33
501,000 - 800,000	50	33.33
801,000 and above	7	4.67
Total	150	100

Source: Field Survey (2022).

The implication of the pseudo-R-square being 0.4162 in the probit regression is that all the explanatory variables

included in the model were able to explain about 41.62% of the factors influencing farm record-keeping behaviour

Table 2. Factors influencing farm record keeping behaviour among poultry farmers.

Variable	Coefficient	Standard error	Z-value	P>/z/
Educational level	0.1709161	0.0487555	3.51	0.000***
Difficulties in keeping records	1.210713	0.3434939	3.52	0.000***
Cooperative membership	1.610087	0.5967774	2.70	0.007***
Extension visit	0.3716176	0.5307239	0.70	0.484

LR Chi² (4) = 63.62 [0.0000]***; Pseudo R² = 0.4162; Log likelihood = -44.61597; ***Significant at 1% level.
Source: Computed from Field Data (2022).

among poultry farmers. The log-likelihood statistics denote the goodness of fit of the model and the strong explanatory power of the model. This information also attests to the reliability of the probit model in this study. Out of the four independent variables, three variables significantly influenced poultry farmer's record-keeping behaviour.

Educational level indicates that the probability of being educated will positively improve farmers' behaviour in keeping farm records. This aligns with the findings of Adedapo and Adekunmi (2019), which assert that a high level of education among poultry farmers would lead to regular record keeping. A high educational level helps poultry farmers to understand better the innovation introduced to them and to make sound and useful economic and managerial decisions based on farm reports (Bukunmi and Yusuf, 2015). Ibrahim et al. (2018) argued that the educational level of the farmer works in tandem with the farmer's behavior towards certain information. Agreeably, the educational level may facilitate the diffusion of new tech and as such has a positive relationship with innovation adoption. Dudafa (2013) established a relationship between farmer's level of education and farm record keeping. The higher the literacy level of the farmers, the more appreciative they are towards farm record keeping (Omotesho et al., 2022). Difficulties experienced during keeping of farm records had a positive coefficient implying that the probability of not having trouble in keeping farm records will positively influence the attitude toward keeping farm records among poultry farmers. This finding supports Owiny (2019) who listed several roadblocks to recordkeeping faced by farmers hence causing a negative attitude towards the practice. Cooperative membership had a positive coefficient revealing that the probability of being a member of a cooperative increases the chances that the farmers will keep records. This implies that cooperative membership allows for the participation of effective farm management techniques such as record keeping. Kolade and Harpham (2014) in their findings showed that the cooperative society is a more auspicious platform for quick dissemination of information about innovations among farmers. Ahmed and Mesfin (2017) indicated that cooperative membership improves the commercialization behaviour of smallholder farmers which in turn improves

farm productivity and income, food security, and allocative efficiency.

Conclusion

The study revealed the factors influencing farm record-keeping behavior among farmers. It showed that the predominant gender in the enterprise is male, most of the respondents have high literacy level and they were mostly married. Conclusively, the outstanding factors that influenced farm record-keeping behaviour were educational level, cooperative membership, and difficulties experienced during keeping of records.

Based on the findings, the following recommendations were made for policy:

1. Educational Programs: Implement educational programs to enhance poultry farmers' understanding of innovations and improve their record-keeping behaviour.
2. Support Systems: Establish support systems to address difficulties faced by poultry farmers during record-keeping, thereby fostering a positive attitude towards the practice.
3. Promote Cooperative Membership: Encourage farmers to join cooperatives to facilitate the dissemination of information about innovations and effective farm management techniques, such as record-keeping.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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