

FACTORS INFLUENCING THE CHOICE OF RECORD KEEPING AMONG POULTRY FARMERS IN EKITI STATE, NIGERIA

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ABSTRACT

The importance of poultry keeping cannot be overemphasized due to its contributions to rural households' food security. Despite the importance of poultry keeping, majority of poultry farmers keep farm records in traditional ways while some did not keep farm records. It was on this basis that the study examined the factors influencing the choice of record keeping among poultry farmers in Ekiti State. The study describe the socio-economic characteristics of the respondents, types of record kept, frequency of record keeping and the methods of record keeping. A well-structured questionnaire was employed to elicit information from 160 poultry farmers using a multi-stage sampled technique. The data collected was analyzed using descriptive statistics, regression analysis and a 3 points Likert scale. It was found that majority (85.56%) of the respondents were male, married (90.00%), educated (71.90%), small scale farmers (90.63%) and mostly within the active age range of 41–50 years with the mean age of 42 (± 10.24) years, and average family size of 5 people. Most (71.88%) of them were full-time poultry farmers with average farming experience of 13 (± 8.54) years and mean monthly income of ₦296,750.00 ($\pm 195,050$). The most common type of record kept by the farmers was production record (70.00%). The main reasons for record keeping were profit evaluation ($\bar{x}=2.88$), planning and budgeting ($\bar{x}=2.84$), to monitor feed consumption, mortality and theft ($\bar{x}=2.80$), staff management ($\bar{x}=2.79$), indication for the validity of farm business ($\bar{x}=2.66$), expansion of farm size ($\bar{x}=2.64$), for proper decision making ($\bar{x}=2.62$), to provide correct data or information for researchers and tax or insurance purpose ($\bar{x}=2.53$). However, the flock size ($P \leq 0.01$), level of education ($P \leq 0.05$), years of farming experience ($P \leq 0.05$), and access to credit facilities ($P \leq 0.1$) were the factors influencing the choice of record keeping among poultry farmers in Ekiti State. Therefore, the stated hypothesis was rejected. Thus, record keeping among poultry farmers is important for monitoring and evaluation of poultry farming.

Keywords: Influential factor, inhibiting factors, poultry farmers, small-scale, record keeping,

INTRODUCTION

Poultry keeping contributes greatly to the livelihoods of rural households in developing countries, and it has become a popular industry for the small and medium scale farmers in Nigeria due to its contributions to the economy, employment opportunity,

animal food production, source of income, source of animal protein, low take up capital requirement, and short production cycle (Ike and Udeh, 2011). Poultry industry has been rapidly expanding and it is therefore one of the most commercialized sub-sectors of Nigerian agriculture which supply protein,

vitamins and lipids of high zoological value to man (United States Department of Agriculture, 2013; Bukunmi and Yusuf, 2015). The popularity of poultry production can be explained by the fact that poultry has many advantages over other livestock. Poultry birds are good converters of feed into useable protein in meat and eggs, the costs of production per unit linger relatively low with high returns and relatively low take up capital (Heise *et al.*, 2015). Poultry meat is very tender and acceptable to consumers without religious or cultural restrictions. Also, the production cycle is quite short, so capital is not tied down while egg production which is one of the major products of the enterprise and is affordable for the common person than other sources of animal protein (Aboki *et al.*, 2013).

In spite of the immense contributions of the poultry industry to the national economy, the subsector has remained traditional and dominated by small and medium scale farmers. Recently, several efforts have been directed towards modernization of poultry industry. These include gradual mechanization by few farmers, the use of battery cage, use of lavacide to reduce the odour of poultry litters, credits facilities in different forms, quality of research into poultry sector and the use of extension personnel for training and workshop on farm modernization. Despite these developments, record keeping by farmers which is an important part of the agricultural modernization scheme, has been largely disregarded by them or kept in traditional way. In most of the developed countries, regular and efficient record keeping by farmers is regarded as a central indicator of

modern agriculture. It is difficult to imagine a country seeking agricultural modernization that does not attach considerable importance to record keeping by farmers as a prime component of such modernization.

Most of Nigerian farmers do not attach importance to record keeping in their farming operations. They often talk of profit and loss not on the basis of facts and figures derived from record keeping, but from guessing or intuition. Failure to keep records is partly due to the subsistent nature of production and the educational background of the farming communities (Adebayo and Adeola, 2005). Although the most important information is committed to memory from year to year, this system has a number of shortcomings. In this regards, the study investigated the reasons for keeping farm records, described their socio-economic characteristics, identified the types of records kept by the farmers, identified the methods used in record keeping, frequency of record keeping and the constraints faced by poultry farmers in keeping farm records. Hence, the null hypothesis stated that the socio-demographic characteristics of the respondents have no significant influence on the choice of record keeping among poultry farmers in Ekiti State was tested.

MATERIALS AND METHODS

Study area

This study was carried out in Ekiti State. The State lies within the tropics between longitudes 4°45¹ and 6°45¹ East of Greenwich meridian and latitude 6°15¹ and 8°5¹North of equator. The State experiences a typical tropical climate with two different seasons, raining season between April-October while dry season is between November - March. The State shares

boundary in the South with Kwara and Kogi States, in the east with Ondo State and in the west with Osun State. The State has a population of 2,384,212 which represent about 1.7% of the nation's total population and covered a land area of 6,353 km² (National Bureau Statistics, 2008; National Population Commission 2006). The average annual rainfall ranges between 2000 mm - 2400 mm, the average annual temperature range from 20⁰C - 27⁰C and 60% relative humidity. There are sixteen (16) Local Government Areas (LGAs) in the State. Ekiti State was purposively chosen for the study due to increase in production and demand of poultry products with exertion to rescue people from famine, poverty and unemployment.

Sampling technique: A total of 160 respondents from sixteen Local Government Areas were selected using a multi-stage sampled technique, while a well-structured questionnaire was used to elicit information for this study. Data were collected on personal and farm characteristics of respondents such as age, marital status, educational level, sex, family size, membership of cooperative society, farm status, primary occupation, type of bird kept and monthly income. Information was also collected on the types of records kept, frequency of record keeping, methods of record keeping and factors influencing the choice of record keeping among the respondents.

Methods of data analysis: Data were analyzed with the use of descriptive statistics such as frequency counts, percentages, mean and standard deviation to describe the personal and farm characteristics of the

respondents, types of record kept, frequency of record keeping and methods of record keeping. A 3-points Likert-type scale was used to rank the reasons for keeping farm records based on the important indices.

A 3-points Likert-type Scale: This aids in finding the contribution that a particular variable makes to the prediction of a criterion variable both by itself and in combination with other variables.

$$\text{Likert Scale} = \sum W/N$$

$$\text{LS} = \text{Sum of Weights } (W_1+W_2+\dots+W_n)/N$$

Where;

W = Weights assigned to each factor by the respondents and it ranges from 1 to 3 where '1' is less important and '3' is extremely important

N = Total number of respondents (i.e. 120).

Weighted score =

$$\frac{\text{No of A} \times 3 + \text{No of U} \times 2 + \text{No of D} \times 1}{N}$$

A = Agree, U = Undecided and D = Disagree

The Multiple Regression model is expressed as follows:

$$Y = a + B_1 X_1 + B_2 X_2 + B_3 X_3 \dots\dots B_8 X_8 + u$$

Where:-

Y = Types of Record Kept

X₁ = Age (in years)

X₂ = Level of Education (Primary = 1, Secondary = 2, Tertiary = 3, No Formal Education = 0)

X₃ = Farming Experience (in Years)

X₄ = Membership of Cooperative Society (No = 0, Yes = 1)

X₅ = Access to Credit Facilities (No = 0, Yes = 1)

X₆ = Access to Veterinary Service (No = 0, Yes = 1,)

X_7 = Constraints Encountered (No = 0, Yes = 1)

X_8 = Flock Size (Number of birds)

a = Constant

$B_1 - B_8$ = Regression Coefficients

u = Error Term

RESULTS AND DISCUSSION

Personal Characteristics of the Respondents

The results in Table 1 revealed the socio-economic characteristics of the respondents. It revealed that majority (80.00%) of the respondents were within the age range of 31–60 years which indicates that majority of the respondents were in their middle-age with the mean age of 42 years and standard deviation of 10.24 years. This shows that most of the poultry farmers were within their active age range and the findings is in accordance with the reports of Bukunmi and Yusuf (2015); and Nurudeen (2012) that majority of poultry farmers were relatively young and within their productive age range. A majority (90.00%) of the poultry farmers were married, few (8.75%) of them were single and very few (1.25%) were divorcee. More than half (54.40%) of them had a household

size between 4-7 people while the remaining (45.60%) had a household size between 1-3 people, with the average household size of 5 persons. This indicated that most of the poultry farmers in the study area have reasonable household size.

More than half (59.38%) of the respondents were Christian while about 40.62 percent of them were Muslim. It was opined that Christianity and Islam was the predominant religions practiced by the respondents. This implies that poultry production did not have any religion barrier. Most (71.90%) of the respondents had tertiary education and the average years of farming experience was 13 ± 8.54 years while majority (90.63%) of them did not belong to any association. It was opined that most of the poultry farmers were literate and their literacy level is expected to influence their ability to keep farm records. This affirmed the assertion of Esiobu *et al.* (2014) that poultry farmers with more years of farming experience and high educational background were more efficient, have better knowledge of poultry enterprise and the market situation, enhanced proper farm records keeping.

Table 1. Personal Characteristics of the Respondents

Variables	Frequency	Percentage	Mean	SD
Age (Years)				
Less than 31	27	16.88		
31– 60	128	80.00	42	10.24
Above 60	5	3.13		
Marital Status				
Single	14	8.75		
Married	144	90.00		
Divorced	2	1.25		
Family Size				
1 – 3	73	45.6	5	3.57
4 – 6	87	54.4		
Religion				
Christianity	95	59.38		
Islam	65	40.62		
Educational Qualification				
No Formal Education	1	1.90		
Primary Education	18	11.20		
Secondary Education	24	15.00		
Tertiary Education	115	71.90		
Farming Experience (Years)				
Less than 11	82	51.25		
11 – 20	57	35.62	13.14	8.54
21 – 30	12	7.50		
Above 30	9	5.63		
Membership of Association				
Yes	145	90.63		
No	65	9.37		
Primary Occupation				
Farming	93	58.13		
Trading	6	3.75		
Civil Servant	49	30.62		
Artisan	12	7.50		

Source: Field survey, 2017.

Farm Characteristics of the Respondents

The result in Table 2 shows the farm characteristics of the respondents in the study area. More than half (58.13%) of the respondents indicated that farming was their primary occupation and majority (71.88%) of them engaged in poultry farming on a full time basis while some (28.12%) of them engaged in it on part-time basis. This implies that most of the poultry farmers in the study area were full-time farmers. More than half

(53.13%) of them used hired labour and the most common type of birds raised were layers and broilers due to customers' demands. This indicated that the most common poultry birds kept by the poultry farmers were layers and broilers. This could be because of the nature of poultry business and market demand. This is similar to the assertion of Adebayo and Adeola (2005) that with respect to the nature of poultry keeping,

most of the poultry farmers engaged in layer and broiler bird production.

Most of the poultry farmers were small scale farmers with the average flock size of about 872 birds and the average monthly income was ₦296,750.00±195,050.00. This was in line with the assertion of Bukunmi and Yusuf (2015) that poultry production in southwest Nigeria is mostly at small or medium scale level.

Majority (90.63%) of the respondents indicated that they kept farm records and this could be as a result of their level of education,

access to veterinary services, and farming experience as indicated by 91.87 percent of them. This affirmed the findings of Dudafa (2013) that most of the poultry/livestock farmers said they kept one form of record or another, because of the nature of poultry enterprise. Esiobu *et al.* (2014) posited that poultry farmers with more years of farming experience and education are more efficient, have better knowledge of poultry enterprise and the market situation, enhanced proper farm records keeping.

Table 2. Farm Characteristics of the Respondents

Variables	Frequency	Percentage	Mean	SD
Farm Status				
Full time	115	71.88		
Part time	45	28.12		
Sources of Labour				
Self Labour	26	16.25		
Family Labour	37	23.13		
Hired Labour	85	53.13		
Both hired and family Labour	12	7.49		
Types of Birds Raised				
Layers	72	45.00		
Broilers	40	25.00		
Layers and broilers	48	30.00		
Flock Size				
Less than 500	76	47.50		
500 – 1000	44	27.50	872	
1001 – 2000	25	15.63		
Above 2000	15	9.37		
Monthly Income (₦)				
Less than 200,000	85	53.13		
200,001 – 500,000	73	45.63	296,750.00	195,050.00
500,001 – 800,000	2	1.24		
Do You Keep Farm Record				
Yes	145	90.63		
No	15	9.37		
Access to Veterinary Services				
Yes	147	91.87		
No	13	8.13		

Source: Field survey, 2017.

Reasons for Keeping Farm Records

The result in Table 3 shows the reasons for keeping records among poultry farmers in the study area. Rating of the important reasons for record keeping ranged from the most important to the least in order of ranking. The mean score was 2 points and this was used as the benchmark. Reasons with mean scores lesser than the benchmark ($\bar{x}=2$ points) were less important while those with mean scores equal to or above the benchmark score were regarded as very important. All the reasons were found to be important based on their mean scores. Proper farm management, vaccination and medication history of the birds was identified as the most important reasons for record keeping with the mean score point of 2.98 and was ranked first. Followed by, profit making purpose ($\bar{x}=2.88$), provision of figures for planning and budgeting in order to determine the profitability of the business ($\bar{x}=2.84$), to know if farm activities are going according to farm plan and for future reference ($\bar{x}=2.83$), to monitor feed consumption ($\bar{x}=2.80$), staff management ($\bar{x}=2.79$), to make necessary adjustment for more efficiency of the farm ($\bar{x}=2.77$), to checkmate theft and mortality

rate ($\bar{x}=2.73$), to provide an indication of the validity of the farm business in order to receive credit facilities from financial institutions and for comparison between the birds on stock and old layers ($\bar{x}=2.66$), for expansion of the farm size ($\bar{x}=2.64$), for proper decision making ($\bar{x}=2.62$), to trace the origin of the birds and serves as tools for selection of breeding ($\bar{x}=2.61$), to provide correct data or information for the researchers and also for tax or insurance purpose ($\bar{x}=2.53$), to receive subsidies from the government ($\bar{x}=2.16$), and also to provide needed information for state and national farm policy makers ($\bar{x}=2.09$). They were accorded second to nineteenth positions respectively. This implies that most of the respondents had one or more reasons for keeping farm records. This affirmed the findings of Dudafa (2013) that most of the poultry/livestock farmers kept farm records because it is useful for planning, control and evaluation; ascertain the financial position of farm; adjustment of expenditure to offset profit or loss; claiming of compensation; and raising additional funds from financial institutions.

Table 3. Reasons for Keeping Farm Record

Reasons	Agree	Undecided	Disagree	Total	Mean	Rank
For proper farm management	468	8	0	476	2.98	1 st
To provide an indication of the validity of the farm business in order to receive credit facilities from financial institutions	330	92	4	426	2.66	11 th
For tax or insurance purpose	306	80	18	404	2.53	16 th
For staff management	390	52	4	446	2.79	8 th
For profit making purpose	423	38	0	461	2.88	3 rd
For production purpose	447	0	1	448	2.80	
Provide figures for planning and budgeting in order to determine the profitability of the business	408	48	0	455	2.84	4 th
For future reference	405	44	3	452	2.83	5 th
To know if farm activities are going according to farm plan	420	24	8	452	2.83	5 th
For vaccination and medication history of the birds	468	8	0	476	2.98	1 st
To make necessary adjustment for more efficiency of the farm	393	42	8	443	2.77	9 th
To monitor feed consumption	387	60	1	448	2.80	7 th
For comparison between the birds on stock	345	74	6	425	2.66	11 th
For proper decision making	369	26	24	419	2.62	14 th
For expansion of the farm size	330	86	7	423	2.64	13 th
To trace the origin of the birds and serves as tools for selection of breeding	330	82	9	421	2.61	15 th
To checkmate theft and mortality rate	369	62	6	437	2.73	10 th
To provide needed information for state and national farm policies	198	84	52	334	2.09	19 th
To provide correct data or information for the researchers	276	120	8	404	2.53	16 th
To receive subsidies from the government	198	108	40	346	2.16	18 th

Source: Field survey, 2017. Benchmark = 2.00

Types of Records Kept by Poultry Farmers

The results in Figure 1 revealed the distribution of respondents based on the types

of records kept by them. Majority (70.00%) of the respondents indicated that they kept production records, some (10.63%) kept financial records, some (9.63%) kept

inventory records, few (7.50%) kept health or vaccination records and very few (2.50%) kept management records. The findings imply that most of the poultry farmers in the study area kept production records probably to monitor the laying of the birds and disease outbreak. This is affirmed the findings of Tham-Agyekum, Appiah and Nimoh, (2010) that most of the poultry farmers keep both production and financial records because of

credit facilities. Okantah *et al.*, (2003) asserted that the reason why all the poultry farmers kept production and financial records was that they were to provide such farm records when applying for loans from financial institutions. Dudafe (2013) posited that three farm records such as purchase, sales and profit or loss records are kept by poultry farmers in Nigeria.

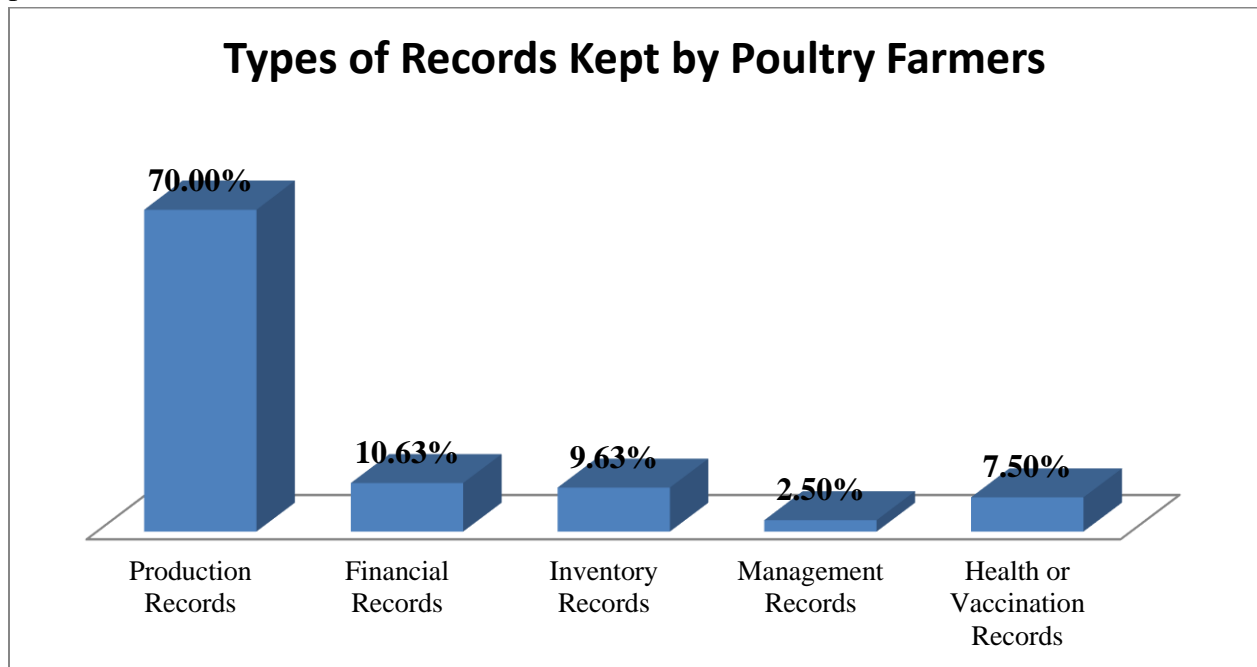


Figure 1. Types of Record Kept by Poultry Farmers

Source: Field survey, 2017.

Frequency of Keeping Farm Records

The results in Figure 2 shows the frequency of record keeping among poultry farmers in the study area. Majority (61.25%) of the respondents kept farm records on daily basis while 23.75 percent of them kept records on weekly basis and few (15.00%) kept records on monthly basis. The findings show that a good number of the poultry farmers in the study area kept farm records on daily basis in order to monitor and evaluate egg production, health status of the birds, feed consumption

and the efficiency of farm attendants. This implies that farm records can be used as a guide to monitor the activities of the farm. The findings corroborate the assertion of Tham-Agyekum *et al.* (2010) that most poultry farmers keep their farm records daily. Okantah *et al.*, (2003) posited that the main reason why most of the poultry farmers keep farm records on daily basis was perhaps due to the fact that farmers needed to keep track of activities on the farm on daily routine.

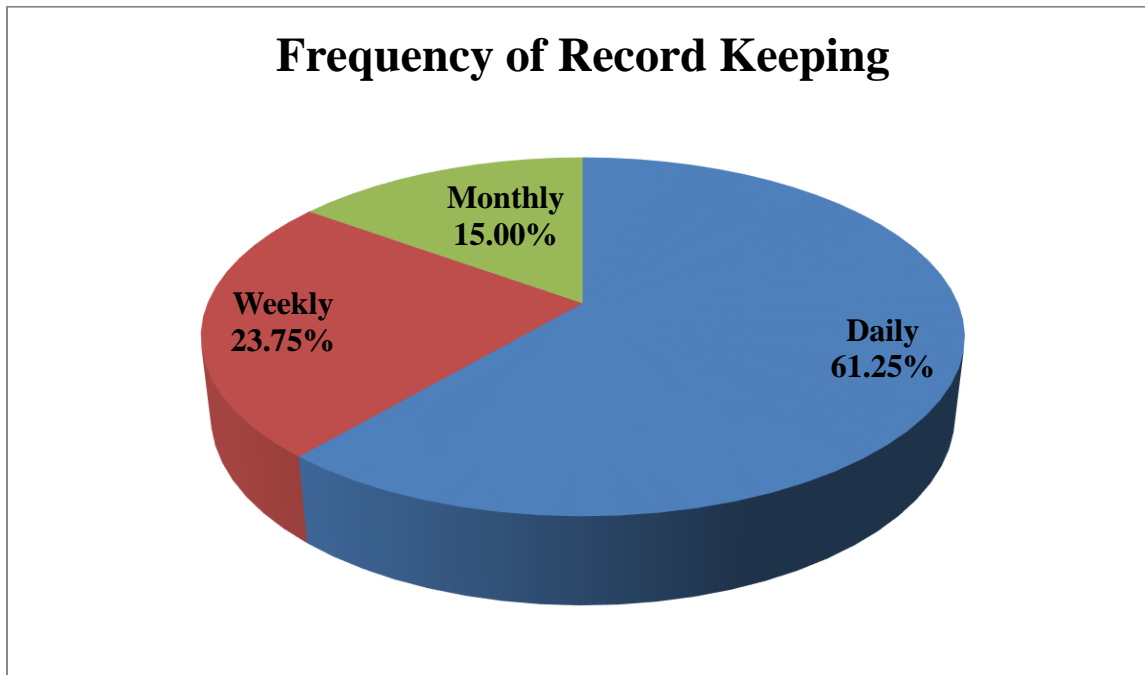


Figure 2. Frequency of Record Keeping
Source: Field survey, 2017.

Methods of Keeping Farm Record

The results in Figure 3 revealed the methods of keeping farm records in the study area. more than half (51.25%) of the respondents kept farm records manually, 33.75% kept farm records both manually and on the computer as a backup while some (15.00%) kept their farm records on the computer only. The findings revealed that most of the poultry farmers in the study area were still using traditional method of records keeping. This shows the need for government and extension

agents to educate the farmers on the importance of keeping farm records in a computerized way rather than manually. The result affirmed the findings of Tham-Agyekum *et al.*, (2010) that majority (82.00%) of poultry farmers kept their farm records manually, which is in books, sheets of papers and temporarily on walls to be transferred later into record books. Aning (2006) and Devonish *et al.*(2000) opined that majority (81.00%)of poultry farmers claimed to keep hand-written records (manually).

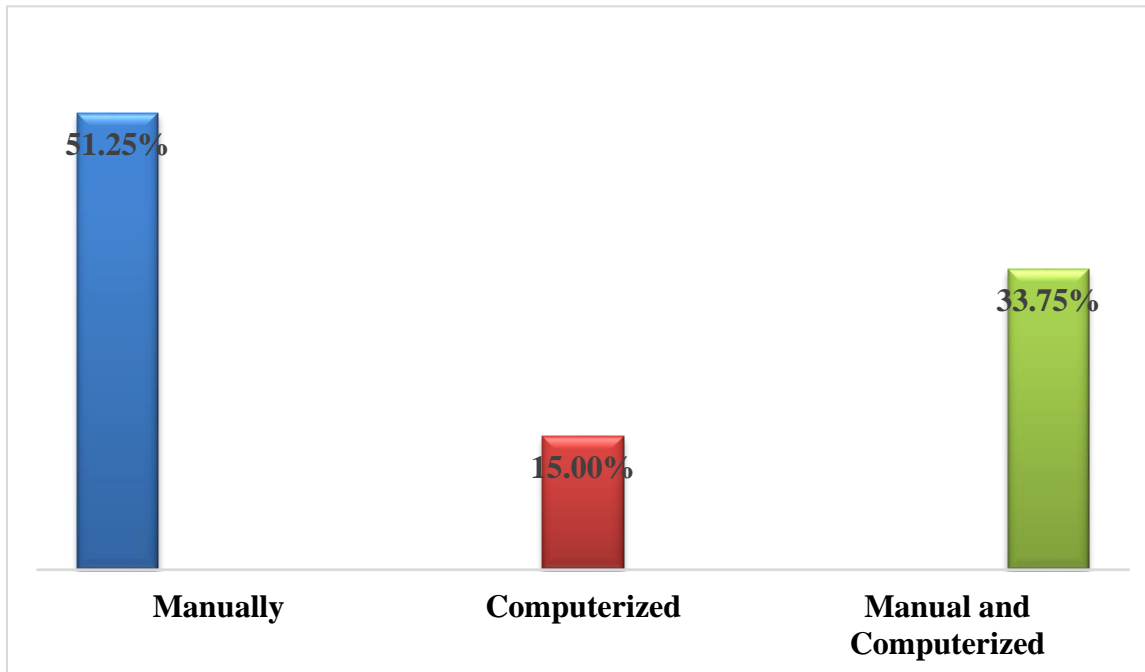


Figure 3. Methods of Keeping Farm Records

Source: Field survey, 2017.

Constraints Encountered in Keeping Farm Records

The results in Table 4 revealed the identified constraints faced by poultry farmers in keeping farm records in the study area. Majority (86.25%) of the respondents indicated the subsistence nature of their farm as the most important constraint to record keeping followed by lack of sensitization on the importance of record keeping on the performance on farming business (83.50%), it requires much time (78.75%) and unavailability of trained specialist in farm management (78.75%). Other identified constraints include perceiving farm records

as a mundane task (77.50%), most farmers engaged in different enterprises (71.25%), epileptic supply of electricity (68.13%) high level of illiteracy and low numeracy knowledge (65.63%) and the fear of paying high tax (58.75%). This implies that poultry farmers in the study area were faced with various constraints. This affirmed the findings of Undutimi (2013) that lack of formal training in record keeping, nature of poultry farming, non-availability of credit facilities and high tax assessment for keeping records was the constraints faced by most of the poultry farmers in Nigeria.

Table 4. Constraints Encountered in Keeping Farm Records

Constraints	Frequency	Percentage
The subsistence nature of farming does not give incentive for keeping farm records	138	86.25
Lack of sensitization on the importance of farm record keeping on the performance of farm business by extension agents	132	83.50
It requires much time	126	78.75
Unavailability of trained specialists in farm management	126	78.75
This is seen as a mundane task for the farmers	124	77.50
Because most farmers engaged in several enterprises	114	71.25
Epilepsy supply of electricity	109	68.13
Due to high level of illiteracy and low numeracy level	105	65.63
Fear of paying high tax if they maintain proper farm records	94	58.75

Source: Field survey, 2017.

Factors Influencing the Choice of Record Keeping among Poultry Farmers

The result in Table 5 revealed the regression analysis of the factors influencing the choice of record keeping among poultry farmers in the study area. It was found that four out of the eight variables were significant. Flock size (X_8) and access to credit facilities were significant at ($P \leq 0.01$)1% level of probability; while level of education (X_2) and years of farming experience (X_3) were significant at ($P \leq 0.05$)5% level of probability. The level of education (X_2) had a positive coefficient of 77.844. Thus, it implies that high level of education of the poultry farmers would lead to regular record keeping. This corroborates the assertion of Bukunmi and Yusuf (2015) that education helps the poultry farmers to understand better the innovation introduced to them and to

make sound and useful economic and managerial decisions based on farm reports. Years of farming experience (X_3) also showed positive coefficient of 24.400, which indicated that increase in years of farming experience could result to regular record keeping and managerial decision making. This is in line with the findings of Adebayo and Adeola (2005) that more experience poultry farmers are likely to manage the farm better and make more informed decisions based on records.

Similarly, access to credit facilities (X_5) had a positive coefficient of 95.811 and it indicated that record keeping is a yardstick to credit accessibility. Flock size (X_8) showed positive coefficient of 0.169 and it implies that a unit increase in flock size would lead to increase in record keeping. However, age of the respondents have positive coefficient but

not significant. While membership of association, access to veterinary services and constraints encountered in keeping farm records has positive coefficient but not significant at any probability level.

The R-square value (R^2) was 0.874, which means that 87.40 percent of the total variation in the factors influencing the choice of record keeping among the poultry farmers was explained by the dependent variables. Variables such as membership of cooperative

society (X_4), access to veterinary services (X_6), constraints encountered (X_7), and age (X_1) though related to record keeping but not significant at all levels of probability. Hence, from the result stated above, the null hypothesis stated that the socio-demographic characteristics of the respondents have no significant influence on the choice of record keeping among poultry farmers in Ekiti State was rejected and the alternate hypothesis was accepted.

Table 5. Regression analysis showing the factors influencing the choice of record keeping among poultry farmers in Ekiti State

Variables	Coefficients	Std. Error	t value	Sig.
Constant	-143.415	197.695	-0.471	0.471
Age (X_1)	-5.826	4.683	-1.244	0.219
Level of education (X_2)	77.844	37.017	2.103**	0.008
Years of farming experience (X_3)	24.400	10.528	2.299**	0.006
Membership of cooperative society (X_4)	71.926	85.144	0.845	0.402
Access to credit facilities (X_5)	95.811	54.593	1.755*	0.089
Access to veterinary services (X_6)	59.735	143.835	0.415	0.680
Flock size (X_8)	0.169	0.012	13.563***	0.000
Constraints encountered (X_7)	16.325	79.00	0.207	0.856
R square	0.874			
F value	44.344			
Adjusted R^2	0.855			

*** Significant at 1%, **Significant at 5%, *Significant at 10% levels of probability.

CONCLUSION AND RECOMMENDATIONS

The study concluded that the most common type of farm records kept by poultry farmers in the study area was production records and it was done manually on daily basis. The reasons for keeping farm records among the respondents ranged from one to nineteen factors depending on the choice of the farmers. Also, they were faced with various constraints such as; epilepsy electricity

supply, finance, technical know-how, security and tax. However, flock size, level of education, access to credit facilities and farming experience were the factors influencing the choice of record keeping among poultry farmers. It was opined that record keeping among poultry farmer is key to monitoring and evaluate poultry production. Hence, the null hypothesis was rejected and the alternate hypothesis was accepted. It is therefore recommended that government should sensitize and educate

poultry farmers on the significance of keeping farm record. Also, there should be rural electrification so as to have access to electricity in order to power the computers system for record keeping.

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