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Farm Record-Keeping Behaviour among Broiler Farmers in Kogi State, Nigeria

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Abstract

This study assessed strengthening agricultural extension innovation through farm recordkeeping behaviour among broiler farmers in Kogi State, Nigeria. A multi-stage sampling procedure was used to select 200 respondents from major poultry-producing communities, and data were collected using structured interview schedule. Data collected were analyzed using percentages, mean, standard deviation and mean scoring. The results showed that 82.0% of the broiler farmers kept farm records such as sales records (82.0%), feed purchase records (76.5%), and mortality records (69.0%), but only 29.0% kept profit and loss records. The study confirms that most broiler farmers are keeping basic farm records but record-keeping is inconsistent for financial management and recommends integrating digital record-keeping training into extension programmes to enhance farm performance and development outcomes by broiler farmers.

Keywords: Record-Keeping Behaviour, Innovation, Farm Management

Introduction

The poultry farming enterprise is one of the most lucrative enterprises in Nigeria (Afodu et al., 2020). Domesticated birds have better ability to utilise feed intake to products such as egg and meat than other livestock businesses. Poultry production plays a vital role in improving food security, income, and employment in Nigeria, but its productivity depends largely on farmers' socioeconomic characteristics and management practices. Among the various poultry enterprises, broiler production has emerged as one of the fastest growing and most commercially viable subsectors due to its short production cycle, rapid turnover, and increasing consumer demand for poultry meat. In Kogi State, broiler farming constitutes an important livelihood activity for many smallholder farmers and contributes significantly to household income and the state's agricultural economy.

Nevertheless, broiler production in the state continues to face challenges related to poor management practices, disease outbreaks, inadequate record keeping, and limited access to extension services, which constrain productivity and enterprise performance. Strengthening farm management practices, particularly farm record keeping, is therefore essential for improving broiler production efficiency and enhancing the effectiveness of agricultural extension interventions (Olobatoke &

Mobayo, 2024). Considering the importance of poultry meat over red meat in terms of the benefit to the environment, economy, society, and health and the increasing cost of managing red meat producing livestock such as cattle, sheep and goat, consumers' interest is now tilting toward white meat from domesticated birds (World Health Organisation [WHO], 2023).

In Kogi State, evidence indicates that poultry production has not kept pace with the growing demand, with many smallholder producers experiencing declining productivity and profitability as a result of poor management practices, disease outbreaks, rising input costs, and inadequate extension support. One of the critical but often overlooked management challenges contributing to this decline is poor farm record-keeping behaviour among poultry farmers. Many smallholder broiler farmers either do not maintain farm records or keep incomplete and irregular records of production activities, making it difficult to monitor flock performance, evaluate production costs, identify disease trends, and make informed management decisions. Consequently, poor record-keeping limits farmers' ability to improve productivity and respond effectively to extension recommendations. This underscores the need to promote proper farm record keeping as an essential farm management practice capable of enhancing decision-making, productivity, and sustainability in broiler production. (Adebayo and Adeola, 2020). Akintunde et al. (2020) suggest that the use of farm data could serve as an effective approach to improving small-scale farming. Farm record keeping is a critical management tool that enhances farm performance, profitability, and decision-making among poultry farmers (Nkeme et al., 2024).

Farm record keeping is a fundamental component of poultry farm management because it provides reliable information for monitoring production performance, controlling costs, evaluating profitability, and making informed management decisions. Accurate records of feed consumption, medication, mortality, vaccination, sales, and expenditures enable farmers to identify production constraints early and adopt appropriate corrective measures. Conversely, poor farm record-keeping behaviour limits farmers' ability to evaluate flock performance, detect disease trends, estimate production costs, and determine the profitability of their enterprises. This often results in poor planning, inefficient resource utilization, reduced productivity, and lower income. In Kogi State, where smallholder broiler farmers face challenges such as disease outbreaks, rising feed costs, and limited extension support, inadequate record keeping further weakens farmers' capacity to make evidence-based management decisions and benefit from agricultural extension services. Consequently, improving farm record-keeping behaviour is essential for enhancing broiler productivity, profitability, and the effectiveness of extension interventions in the state. (Pan et al., 2021). However, many broiler farmers rely on intuition rather than proper record keeping when making decisions. As a result, their decisions are frequently based on rough estimates and assumptions. Although some farmers keep records, they consider relevant, they often overlook important records such as production or output data, cash sales, and general expense records.

Muhammad et al. (2020) stated that farmers in Adavi and Okene Local Government Areas of Kogi State maintained records relating to production, finance, inventory, and labour demonstrating that different categories of farm records are considered essential for effective farm management. These studies indicate that poultry farmers recognise the importance of recordkeeping, but the extent and consistency of record maintenance vary considerably among farmers. This variation highlights the need to

examine the record-keeping behaviour of broiler farmers in Kogi State, Nigeria, so that appropriate and effective policies can be recommended. Therefore, the study sought to:

i. identify types of farm records kept by the broiler farmers;
ii. ascertain the level of farm record-keeping behaviour by the broiler farmers; and
iii. identify the constraints affecting the farm record-keeping behaviour of the broiler farmers.

Methodology

The study was carried out in Kogi State, Nigeria. It is located in the middle belt, or what is historically referred to as the north central zone area of Nigeria, with 21 government areas and 3 senatorial zones. Kogi State stretches from about $6^{o}30'$N to $8^{o}50'$N latitude, and $5^{o}20'$E to $7^{o}50'$E longitude. The state comprises 3 major ethnic groups and other languages.

A multistage random sampling procedure was adopted, with the unique characteristics of the respondents considered at each stage to ensure fair representation. The state was divided into four agricultural extension zones—Zone A (Aiyetoro-Gbede), B (Anyigba), C (Koton-Karfe), and D (Alloma). In the first stage, all the four zones were used. In the second stage, one block was randomly selected from each of the four zones: Ijumu, Dekina, Ajaokuta, and Ofu. In the third stage, five cells were randomly chosen from each selected block, resulting in a total of twenty cells. Finally, in the fourth stage, ten broiler farmers were selected from each of the twenty cells using snowball sampling technique. This gives a total of two hundred sampled respondents. Primary data were collected using a structured interview schedule. The types of records kept, level of farm record-keeping behaviour and the constraints affecting farm record-keeping behaviour of broiler farmers were analysed using frequencies, percentages, statistics and mean score values.

Measurement of Variables

The types of farm records kept by broiler farmers was measured by asking respondents to indicate whether they kept each type of farm record. Responses were measured on a dichotomous scale as Yes=1 or No =0. Farm record-keeping behaviour was measured using a four-point Likert-type scale (Always=4, Often=3, Occasionally= 2 and Never=1) based on the frequency with which respondents kept each record. The constraints affecting the farm record-keeping behaviour of the broiler farmers was measured using a three-point Likert-type scale (Very severe=3, Severe=2 and Not severe=1). A mean score and standard deviation were computed for each item.

Results and Discussion

Types of Farm Records Kept by Broiler Farmers

Results from Table 1 show that the majority (82.0%) of broiler farmers maintained sales records, feed purchase records (76.5%), purchase records (input records) (74.0%), and vaccination records (72.0%). Mortality records were maintained by 69.0%, while profit and loss records were least kept, at 29.0%. This implies that broiler farmers prioritise operational records over management records. This aligns with the findings of Udoh et al. (2024), that proper farm documentation and

management practices are essential for improving poultry farm productivity, planning, and participation in agricultural development programmes, which depend on accurate farm records for effective implementation.

Table 1: Types of farm records kept by broiler farmers

Types of farm records	Percentage (%)
Purchase records (input records)	74.0
Sales records	82.0
Feed purchase records	76.5
Mortality records	69.0
Vaccination records	72.0
Profits and Loss records	29.0

Source: Field Survey, 2025

Level of Farm Record- Keeping Behaviour by the Broiler Farmers

Results from Table 2 show that the means score shows sales records ($\bar{x}$=3.19; SD=0.81) were ranked highest, followed by feed purchased records ($\bar{x}$=3.07; SD= 0.84), mortality records ($\bar{x}$=2.94; SD=0.87), purchase or input records ($\bar{x}$=2.92; SD=0.89), vaccination records ($\bar{x}$=2.78; SD=0.93), and profit and loss records ($\bar{x}$=2.04; SD=1.07). This implies that broiler farmers who record frequently can better interpret extension recommendations, adopt innovations promptly, and evaluate production performance. A low mean score in profit and loss records highlights gaps in innovation adoption, especially for interventions requiring detailed record-keeping. Though, many broiler farmers demonstrate moderate engagement in farm recordkeeping, significant gaps remain, particularly in financial record management. Strengthening farmers' record-keeping behaviour will enhance farm management efficiency, improve profitability, and increase the effectiveness of agricultural extension innovation programmes. This finding agrees with Adegbite and Yusuf (2024), who reported that proper farm recordkeeping improves farm efficiency, profitability, and adoption of extension innovation mong poultry farmers in Nigeria.

Table 2: Level of farm record-keeping behaviour by the broiler farmers

Variables	Mean	SD
Sales records	3.19	0.81
Feed purchase records	3.07	0.84
Mortality records	2.94	0.87
Purchase records(input records)	2.92	0.89
Vaccination records	2.78	0.93
Profit and Loss records	2.04	1.07

Source: Field Survey, 2025 mean cut off= 2.5

Constraints Affecting Farm Record-keeping Behaviour of Broiler Farmers

The mean scores of constraints to farm record keeping by broiler farmers (Table 3) ranked poor knowledge ($\bar{x}$=2.31; SD=0.72) as very severe, followed by low education ($\bar{x}$=2.20; SD=0.75), high cost of maintaining records ($\bar{x}$=2.10; SD=0.77), time-consuming nature of recordkeeping ($\bar{x}$=2.01; SD=0.79), and size of farm holding ($\bar{x}$=2.00; SD=0.81). Minor constraints include lack of interest ($\bar{x}$=1.85; SD=0.78), poor extension contact ($\bar{x}$=1.71; SD=0.79), and complexity of record keeping method ($\bar{x}$=1.64; SD=0.78), poor marketing ($\bar{x}$=1.51; SD=0.69), and poor input supply ($\bar{x}$=1.36; SD=0.59). This agrees with the finding of Ibok et al. (2024), that inadequate technical knowledge limited training, and poor extension support significantly constrained poultry farmers' record-keeping behaviour. The findings underscore the need for strengthened extension services and capacity building programmes to improve farmers' record-keeping skills and overall farm management.

The findings have important implications for agricultural extension innovation programmes. The moderate level of farm record eeping observed among broiler farmers suggests that extension innovations such as digital advisory services, precision poultry management, and farm monitoring systems can be successfully implemented if farmers are properly trained. Farm recordkeeping provides essential baseline data that enable extension agents to assess farm performance, identify production challenges, and deliver targeted advisory services. Farmers who maintain proper records are better able to evaluate the effectiveness of extension recommendations and adopt improved technologies more efficiently.

However, the poor maintenance of financial records such as profit and loss accounts limits the effectiveness of extension innovations that require detailed farm business data. Without adequate financial records, farmers may find it difficult to assess profitability, access agricultural credit, or adopt modern farm management innovations. Addressing constraints such as lack of knowledge, low education, and poor extension support will enhance farmers' record-keeping behaviour and improve the effectiveness of extension innovation programmes.

Improving farm record keeping among broiler farmers will therefore strengthen extension service delivery, enhance innovation adoption, improve farm profitability, and promote sustainable poultry production.

Table 3: Constraints affecting farm record-keeping behaviour of broiler farmers

Research items	Mean Score (MS)	SD
Time-consuming nature of record keeping	2.01	0.79
Size of farm holding	2.0	0.81
Lack of interest	1.85	0.78
Poor marketing	1.51	0.69
Low education	2.20	0.75
Complexity of record keeping methods	1.63	0.78
Poor inputs supply	1.36	0.59
Poor knowledge	2.31	0.72
High cost of maintaining records	2.10	0.77
Poor extension contact	1.71	0.79

Source: Field Survey, 2025

Note: Bench mark=2.0

Conclusion and Recommendations

The majority of farmers maintained operational records such as sales, feed purchase, input, vaccination, and mortality records, while profit and loss records were poorly maintained. There is moderate engagement in farm record-keeping among smallholder broiler farmers. The study confirms that farm record keeping is a key extension innovation and recommends integrating digital record-keeping training into extension programmes to enhance farm performance and development outcomes. Extension agents should intensify farm visits and advisory services to improve farmers' knowledge, motivation, and adoption of proper record-keeping practices. Farmers should be trained on farm business management, including financial analysis, budgeting, and profitability assessment, to improve decision-making and enterprise sustainability and should be encouraged to adopt digital agricultural tools and extension innovations that rely on farm data to improve productivity and farm efficiency.

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