Journal of Agricultural Economics, Extension and Rural Development
Abbreviated Key Title: J. Agric. Econs. Extens. Rural Dev.
ISSN-2360-798X (Print) & Open Access
Vol 12: (10): Pp.: 147-154
Volume-12 |Issue-12| December, 2024| DOI:10.54978 *Full Length Research*

Assessment of the Attributes of Noiler Birds among Rural Women Poultry Farmers in Kebbi State, Nigeria

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Accepted: 20/11/.2024 **Published:** 14/12/2024

Abstract: This study assessed the attributes of rural women poultry farmers' preference for Noiler birds' production in Kebbi State, Nigeria. The study was conducted in five Agricultural Development project (ADP) zones, namely Argungu, Birnin Kebbi, Bunza, Yauri and Zuru. Two local government areas were first purposively selected from each of the ADP zones. Two Villages were then selected in each of the selected local government areas making a total of 20 villages for the study. Finally 240 respondents were randomly selected from a sampling frame of 675 women poultry farmers. A total of 240 respondents, therefore constituted the sample size of the study. Primary data collected using a structure questionnaire and interview. The data collected were analyzed using SPSS version 3. Both descriptive statistics and pairwise ranking were used in data analysis. Descriptive statistics were used to achieve objectives 1 while pair wise ranking were used to achieve objective 2 respectively. The results revealed that a good number (45.8%) of the respondents were within the age range 30 – 39 years. Also good number (53.3%) had non-formal education (46.7%) of them having poultry farming and trading as their major source of income. The result equally shows that fast growing ability, large body size and high market value were the major perceived attributes that affected rural women poultry famer's preferences for Noiler bird. Based on the findings of the study, it was concluded that the Noiler breed of chicken was highly accepted among rural women poultry farmers in the study area. It is therefore, recommended. Poultry disease vaccine (i.e. thermos table Newcastle diseases vaccine NDV 4 and i2) should be provided to the rural women poultry farmers in the study area by the government and NGOS so as to reduce the disease infestation. Also loans and credit at single digit interest should be provided to the rural women poultry farmers in the study area by banks, government and NGOS so as 'to help them to boost their production capacity. More hatcheries for Noiler bird should be established by investors or innovated Kerosene incubator made recently by the NVRI, Vom should be made available to the women farmers by government or NGOS. So as to improve the availability of Noiler day old chicks in the study area.

Keywords: Assessment, Attributes, Noiler Birds, Rural Women Poultry Farmers

Quick Response Code

Citation: Kamba et al. Assessment of the Attributes of Noiler Birds among Rural Women Poultry Farmers in Kebbi State, Nigeria. *Agric. Econs. Extens. Rural Dev* 12(12) Pp 147-154, 2024

Journal Name
https://www.springjournals.net/jaeerd

INTRODUCTION

Improved Poultry production offers hope in most developing countries for bridging the widening gap between demand and supply for animal protein of the populace. However, because of the limited resources of most farmers in these parts of the world, backyard, and small – scale holdings appear more feasible for the 80% percent or more of the farming families (Ganiyu, 2005). Therefore, presently, various levels of government in many countries around the globe such as India, France, South Africa, Kenya, Tanzania and Nigeria in particular are now placing emphasis on the promotion of small – holder poultry production in order to improve the nutritional status or for the economic empowerment of low-income rural families. For instance, in Nigeria, various governments in the past had introduced various programs such as Operation Feed the Nation (OFN), Economic Advancement Programme (FEAP) and Poverty Alleviation Program and the recently introduced covid-19 intervention program of the current administration tagged "National COVID-19 Action Economic Recovery Stimulus (NG CARES). In all the programs small – holders poultry production have featured very prominently in the livestock components.

Over the years, researchers around the globe have been making effort to upgrade and improve the productivity of rural chicken so as to serve as a means of empowering small – holder poultry farmers in the rural areas with particular focus on women. However it has been reported that the proper identification of appropriate chicken breeds that will be suitable to a particular environment agro – ecological zones in Nigeria is required for the growth and development of the poultry industry (Hassan et al, 2018). According to him such decision on the chicken genotypes of preference is expected to be based on farmers' choice especially at the small – holder levels using the bottom – top approach. Under the African Chicken Genetic Gains (ACGG) project, Kuroiler Sasso birds (foreign, but tropically adapted genotypes) alongside the newly developed Nigeria indigenous FUNAAB alpha, as well as the Shika Brown, Fulani, and Noiler chickens were tested in five agro ecological zones of Nigeria. According to him, the study, therefore, aimed at evaluating choice of chicken genotypes and trait preferences by small – holder chicken farmers in Nigeria. This may assist in future research effort on genotypes and traits of economic importance by private and public intervention programs geared towards boosting small – holder chicken production. Poultry production contributes to people's livelihoods through numerous channels including income, food, employment, medicine, industrial usage, manure and general improvement of living condition of the rural people

Statement of the Research Problem

The increasing demand for animal protein in recent years has necessitated the local farmers to look inward for a reliable and sustainable source to meet the dietary requirements of the ever – increasing population in the study area. The local breeds of chicken which used to provide a reasonable proportion of protein supply is decreasing as a result of several factors such as: diseases, climate change, increase in population size, inadequate extension services in the rural areas and low level of literacy among rural women poultry farmers and bad husbandry practices among others. Women who constitute a greater percentage of the population are more than ever before committed to search for viable alternative source to fill the existing demand for poultry. This is with a view to address the challenges of food insecurity, infant and maternal morbidity and mortality, hunger, stunted growth and financial dependency among rural women populace. The Noiler chicken breed is the product of over a decade research and development carried out by Amo Farm Sierberer Nigeria Limited, Awe village of Oyo State, Nigeria for small holder poultry farmers particularly women to address the challenges of food insecurity and financial dependency among rural women.

Despite this economic importance, the attributes affecting rural women poultry farmers preference for Noiler is not been identify in the study areas, It is against this background that this study attempted to find answer to the following research questions.

Objectives of the study

The broad objective of this study is to assess the attributes of Noiler chicken breed among rural women poultry famers in Kebbi State. While the specific objectives are to: -

i. Describe the socio-economic characteristics of the respondents

2. Find out the perceived attributes of Noiler birds among rural women poultry farmers in the study area

METHODOLOGY

Description of the Study Area

Kebbi State is located at latitudes 10^0 10'to 13^0 15'N and longitudes 30^0 30'to 60^0 35'Ecovering an area of about 37, 699 Kilometers Square. The state is situated in the North-western part of Nigeria. It shared boundary with Sokoto State in the North, in the East, with Zamfara

State, while in the south with Niger State and in the west with Niger and Benin Republics. The state comprises five agricultural development project zones (Birnin Kebbi, Argungu, Yauri, Bunza and Zuru) with twenty-one (21) local government areas. The projected population of the state is 4,440,000 people (NBS, 2021). The dominant tribes found in the state are Hausa, Fulani, lelna (Dakkarkari), Kabawa and Kambari. Other non-indigenous cultural and linguistic groups are Yoruba, Igbos, Nupe, Tivi and Idoma (Ahmed, 2021).

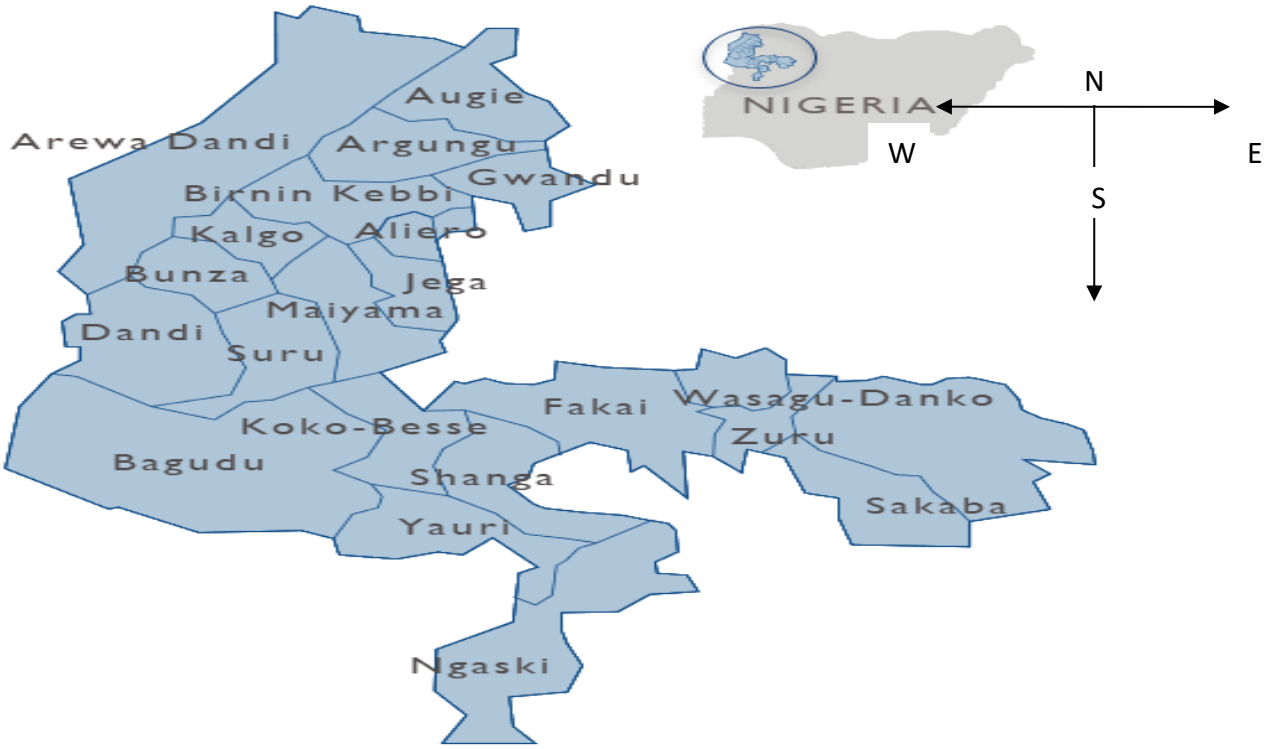

Figure 1: Map of Kebbi State, Showing the study Area

The vegetation of the area is savannah (Sudan, Sahel and Northern guinea savannah) agro-ecological zones. The area is characterized by tall scattered trees and shrubs usually deciduous in nature and grasses which are greenish in the rainy-season but dry and in the dried season. The major agricultural crops grown in the area include rice, sorghum, cowpea, millet, soybean, sugar cane, and so on. The farm animals reared in the area are cattle, sheep, goat and poultry (Dudu, 2014).

The geology of Kebbi State is characterized by thick and vast sequences of sedimentary deposits, the rest being underlain by Precambrian basement complex rocks. The predominant soil types of the area are the ferruginous tropical soils. Their main features include a sandy surface horizon underlain by weakly developed clay mottled and sometimes concreting sub soil – The sandy top soils are easily washed away by rain water and wind. The soil have low water holding capacity and are therefore susceptible to drought (Ahmed, 2021).

Sampling Procedure and Sample Size

The study covered only rural women that engaged in poultry production in the area. Five (5) Agricultural development project (ADP) zones in the state were used. Two local government areas were first purposively selected from each of the ADP zones. Two Villages were then selected in each of the selected local government areas making a total of 20 villages for the study. Finally 240 respondents were randomly selected from a sampling frame of 675 women poultry farmers. A total of 240 respondents therefore constituted the sample size of the study. Below is the sampling procedure, sampling frame, sample size of the study.

Table 3: Sampling Procedure, Sampling Frame and Sample Size for the Study

ADP Zone	Selected Local Govt. Area	Selected Village Area	Number of women famers	Selected women farmers
Argungu	Argungu	Alwasa	30	10
		Lailaba	35	11
	Arewa	Yeldu	22	10
		Sarka	18	9
Bunza	Bunza	Raha	45	18
		Zogirma	28	10
	Dandi	Tukurwa	19	9
		Banizumbu	27	10
Birnin Kebbi	B/Kebbi	Tarasa	20	10
		Ruga	30	10
	Aliero	Jiga	21	10
		Sabiyal	54	14
	Maiyama	Adarai	26	10
		GiwaTazo	31	10
Yauri	Yauri	Tondigada	55	19
		Zamare	31	11
	Ngaski	Garin Baka	24	11
		Gidan Kwano	39	11
Zuru	Zuru	Senchi	48	14
		Tadurga	72	23
5	**10**	**20**	**675**	**240**

Source: Field Survey, 2023

Data Collection

A structured questionnaire containing both open and close ended questions was used to collect primary data from the respondents. While text books and journals were used as reference materials. The researcher read and interpreted the questionnaire to respondents that could not read and understand English.

Data Analysis

The data collected from respondents were analyzed using SPSS version 3. Descriptive statistics were used to achieved objective 1, while Pair-Wise-Ranking was used to achieve objective 2

Pair wise ranking model specification

Pair wise ranking is one of the core-tools used in participatory rural appraisal (PRA). It was employed to achieve objective 2 of the study. It was used in the study in order to obtain a quantities result for the study. In the first steps it involves construction of matrix where the identified attributers as perceived by the women formers in the study area were listed at left side of the matrix. In the second step, it involve comparing of the attributers by choosing the best attributers, in the pair. The attributers with his preferences ware ranked 1^{st},2^{nd} ,3^{rd} -----n.

RESULTS AND DISCUSSION

Table 1: Socio-Economic Characteristics of the Respondents

Age (years)	Frequency	Percentage	Mean
20-29	32	13.3	44.5
30-39	110	45.8	
40-49	56	23.3	
50-59	24	10	
60 and above	18	7.5	
Total	**240**	**100**	
Education Status			
Primary	32	13.3	
Secondary	24	10.0	
Tertiary	8	3.3	
Non Formal	128	53.3	
Qur'anic	48	20.0	
Total	**240**	**100**	
Marital Status			
Single	16	6.7	
Married	136	56.7	
Divorced	40	16.7	
Widowed	48	20.0	
Total	**240**	**100**	
Number of Children			
None	16	6.7	8.0
1-5	56	23.3	
6-10	140	58.3	
11 and above	28	11.7	
Total	**240**	**100**	
Major source of income			
Poultry Farming	80	33.3	
Poultry farming and trading	112	46.7	
Husband and relatives	24	10.0	
Poultry farming and relatives	24	10.0	
Total	**240**	**100**	
Source of poultry information			
Radio	24	10.0	
Television	32	13	
Friends and relatives	152	63.3	
Extension agents	32	13.3	
Total	**240**	**100**	
Number of poultry birds			
1-20	120	50.0	45.5
21-40	40	16.7	
41-50	24	10.0	
51 – 60	16	6.6	
61 and above	40	16.7	
Total	**240**	**100**	

Source: field Survey, 2023

Table 2: Pair-Wise-Ranking Results of Perceived Attributes of Noiler Birds

S/N	PERCEIVED ATTRIBUTES	PERCEIVED ATTRIBUTES NUMBER										SCORE	RANK
		1	2	3	4	5	6	7	8	9	10		
1.	Fast growing		FG	FG	FG	FG	FG	FG	FG	FG	FG	9	1st
2.	Very social			ES	EN	BS	FC	MV	VA	VS	MT	1	9th
3.	Large egg size				EN	BS	FC	MV	ES	ES	MT	3	7th
4.	Egg number					BS	FC	MV	EN	EN	MT	4	6th
5.	Body size						BS	LS	LS	BS	BS	8	2nd
6.	Feed conversion							MV	FC	FC	MT	5	4th
7.	Market value								MV	MV	MV	7	3rd
8.	Very Attractive									VA	MT	2	8th
9.	Manure production										MT	0	10th
10.	Meat taste											6	5th
	Total												

Source: Field Survey, 2023

DISCUSSION

Age of the Respondents

The result in (Table 4.1) reveals that a good number (45.8%) of the respondents were within the age range of 30-39 years, followed by (23.3%) of the respondents who were within the age range of 40-49 years, (13.3%) of them fell within the age range of 20-29 years, 10%of the respondents of were within the range of 50-59 years and only (7.5%) of them were within the age range of 60 years and above. This indicates that respondents were severally within their active and productive age. This findings is in line with that of Aliyu (2018) who reported that rural women farmers in sub-Saharan Africa usually attained their active and productive age between 40 -49 years. The findings equally agreed with korede (2016) who reported that the most productive stage of rural women in Africa is between the age range of 40-49 years, that it is within this range that most of them shoulder some parts of the family responsibilities.

Education level of the respondents

Table 4.1 reveals that more than half (53.3%) of the respondents had non-formal education, (20.0%) had Qur'anic education, (13.3%) had primary education. (10.0%) of them had secondary education and only (3.3%) of them had tertiary education. shows that the

respondents had one form of education or the other, implying that respondents could accept innovations easier. This result however, is in disagreement disagreed with that of Korede (2021) who reported that majority of rural women farmers of Sub-Saharan Africa had no formal of education.

Marital Status of the Respondents

Table 4.1 equally shows that a most (56.7%) of the respondents were married, 20.7% were widows, 18.7% of them were divorced and only 8.7% were single. This implies that majority of the respondents had one responsibility or the other. The result coincides with the findings of Bummi (2001) who revealed that African rural women farmers were mainly married with children.

Number of Children of the Respondents

The Result on the number of children of the respondents revealed that a good number (58.3%) of the respondents had 6 - 10 children, (23.3%) had 1-5 children, (20.0%) had 11 or more children while (8.7%) had no children. (Table4.1). this implies that majority of the respondents had family responsibilities. This result is in line with that of Olanike *et al*., (2018) who reported that most rural women in sub- Saharan Africa had more than five children.

Major Sources of Incomes of Respondents

Table 4.1 also depicts that a good number (46.7%) of the respondents had poultry farming and trading as their major sources, of incomes, followed by (33.39%) who had only poultry farming as their major source of income, (10.0%) also had husband and relatives as their major source while (10.0%) also had poultry farming and relatives as their major source of incomes. This indicates that all the respondents had one source of incomes or the other. The result, therefore, agreed with Aliyu (2018) who reported that majority of the rural women farmers in West Africa had one source of incomes or the other. The result of the study has father indicated that poultry production is the major source of income for majority (90.0%) of the respondents.

Major sources of poultry farming information

Table 4.1 also revealed that majority (63.3%) of the respondents received poultry farming information from friends and relatives, (13.3%) of them received extension agents, while 13.3% received from radio. This implies that there was shortage of agricultural extension agents in the study area. This finding agreed with that of Korede (2016) who reported that majority of the rural farmers in Sub-Saharan Africa source their farming information from their close friends and relatives.

Number of Poultry Birds Raised

Table 4.1 equally indicates that a good number (50.0%) of the respondents had 41-60 birds, (16.7%) had 21-40 birds, also (16.7%) or more, (10.0%) had 1-10 birds and (6.7%) of them had 61-80 birds per farmer. This indicates that the respondents were small-scale farmers. This finding is in line with that of Aliyu (2018) who reported that majority of the poultry farmers in African, were small – scale with less than 100 birds per farmer. The finding equally agreed with that of Olanike (2018) who reported that African rural women poultry farmers are small – scale farmers with 10-80 birds per farmer.

Pairwise Ranking Results

Pair wise ranking reveals that fast growing (FG) ability of noiler birds was highly ranked (1st position) followed by large body size (2nd position) and market valve (3rd position) high feed conversion rate (4th position), meat taste (5th position) while the remaining attributes high egg number, large egg size, very attractive, very social and manure production were ranked 6^{th,} 7th, 8th, 9th, and 10th respectively. Within the attributes ranking farmers appeared to attach importance to high growth rate, large body size and the market value. Therefore the high the preferences (score) the more important the trait is to the famers. The high preference for fast growing and large body size in this present study could be due to the economic reason. This implies that farmers in the study area attached value more to attributes of economic importance. The low ranking of manure production might be attributed to the fact that women farmers in the study area pay little or no attention to crop farming. Some of the merits indicated by farmers for the choice of a particular attributes in the current study one similar to the egg productivity, body size and fast growth traits reported by Sisay *et al*., (2018)! And Mahoro *et al.*, (2018). This result agreed with that of Hassan *et al*., (2018) who reported that Noiler bird production is now getting popularity particularly among women rural poultry farmers of the developing nations. Many women poultry farmers are been attracted by Noiler birds due to their perceived attributes such as fast growing ability, social nature, high feed conversion ability, high market value, high egg number, large body size, large egg size, meat taste and attractiveness among others. More so, the findings equally agreed with that of Olanike *et al*. (2018) who posited that Noiler birds production are now receiving some considerable attentions due to their high economic traits, Rural women poultry farmers are now accepting Noilers due to their fast growing rate, coupled with their feed conversion

efficiency. So also, the result coincides with that of Yakubu *et al*., (2019) who reported that Noiler birds' production among rural women poultry farmers in West Africa is now gaining popularity due to their growing interest and this results from.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that the Noiler breed of chicken was highly accepted among rural women poultry farmers in the study area

From the conclusion of the study the research work therefore, recommended.

i. More hatcheries for Noiler birds should be established by investors in the study area so as to improve the availability of Noiler day old chicks (D.O.C)

ii. Loan and credits at single interest should be provided to the rural women poultry farmers in the study area by banks, government and NGOs, so as to boost their production capacity

iii. Poultry diseases vaccines (i.e. thermos table new castle disease vaccine (NDN) 4 or I2) should be provided to the rural women poultry farmers in the study area by the government and NGOs, so as to reduce the prevalence of diseases.

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