



## RISK ASSESSMENT AMONG COOPERATIVE POULTRY EGG FARMERS IN EKITI-EAST LOCAL GOVERNMENT AREA OF EKITI-STATE, NIGERIA.



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**Abstract:** The study was conducted to investigate risk assessment among cooperative poultry egg farmers in Ekiti-east Local Government Area of Ekiti-State, Nigeria. A multi-stage sampling technique was employed to select the sample size of one hundred and twenty (120) respondents using a well-structured questionnaire. Data was analyzed using simple descriptive statistics and inferential statistics such as safety first model and multiple regression were used to analyze the data. Majority married, young and educated, majority of the respondents source their credit from personal savings to finance their poultry egg enterprise. They were highly experienced in poultry egg business because 81.70. % of poultry egg farmers had more than 10 years' experience. The poultry farmers with optional responses under poultry risk were either averse to such risks or preferred them. Poultry farmers that had risk aversion attitudes, have risk mitigating strategies through which they reduce risk adverse effects. The regression result support the proved that risk attitude of the poultry farmers could be influenced by their socio-economic characteristics. The significant variables in the study are educational level, house hold size, poultry farming experience and gender. Poultry farmers in the study area exhibited the 3-probable categories of the risk attitudes obtainable. It was noted that the ratio of an individual's being a risk preferred to risk averse was ratio 1 to 3 (1:3). The study recommended that: Government at all levels should ensure effective policy formulation to reduce the risk faced and improve risk mitigation strategies. Poultry farmers should be more encouraged, educated and enlightened to join cooperative organizations in order to have access to better information, more access to credit to finance their enterprise that will help in poultry risk mitigation and facilitate positive interactions especially on risk sharing.

**Key word:** Cooperatives, Risk assessment, poultry egg farmers, and multiple regression

### Introduction

Production activities of poultry farmers are characterized by high level of risks mostly in developing countries. These include high costs of inputs and veterinary services which reduces productivity and net returns from the investment. In some cases, outbreak of diseases could wipe out the entire population of birds in a poultry leading to the death of the business enterprise itself. Further, theft of birds and market glut could force the farmers to sell off their products below production costs. This leads to reduction in profit, limited access to formal financial systems for credit and insurance, negligible capital investment and low savings (Oparinde, 2008) among others. Also, many of the existing poultry farms are folding up and prospective investors are becoming increasingly reluctant to invest due to the associated production risks and uncertainties. These uninsured risks threaten the livelihood and existence of the farmers as they seem to have adverse long term welfare consequences. The persistence of these risks in many cases could result to a decline in consumption below subsistence levels thus, this had negative implications for the nutrition, health, schooling and other human and physical assets which have prospects as income sources (Baez, 2006).developing countries, among many other challenges, individuals, especially those who are resident in the rural areas survive on low incomes under high levels of uncertainty. This is as a result of low returns from farming which is the major source of their livelihood. Specifically, approximately 70% of the workers in low income countries are employed in the agricultural sector, thereby exhibiting

higher vulnerability to risky and uncertain situations (World Bank, 2014). These factors range from climatic variability, crop yield failure, and input price variability, incidences of pests and diseases, environmental degradation, pollution from industrial sites, oil spillage, and insecurity, among others. These factors make small-scale farmers inadequately equipped against risks and uncertainties (Ayinde, 2018) with likely decline in their consumption expenditures. Coping strategies are also adopted by households in order to mitigate the impacts of the risks and uncertainties. It is assumed that the behavior of households would vary depending on whether or not they have access to measures to cope with emergencies. That is, accessibility of risk-coping measures constitutes a critical constraint for household strategy and possibly serves as key determinant of whether the maintenance or increase of the standard of living will be adopted as the objective of household strategy or not (Vigh, 2008). The gravity of losses recorded from risk exposure by farmers is also a function of the nature of the enterprise. Precisely, livestock is perceived as the most risky enterprise and investors always exercise a lot of caution in the integration of such in the sensitivity analysis of the entire project's feasibility. Poor farmers in developing countries are less privileged and lack access to formal financial services, a situation that affect them from contributing to economic development and growth of their countries because they have limited resources which limits their productivity, income and investment these had led farmers to a number of options to enhance their farm production activities,

increase households income and improve their well-being. One of the options includes polling of individual limited resources together to work together as members of cooperative society. Cooperative is a voluntary association of people with common goals, who have come together voluntarily to carry on business for the good of all members where they work together on mutual benefits through a democratic control. Members contribute equitable to capital requirements of their cooperative and accept a fair share of the risks and benefits of their undertakings.

#### **Problem Statement**

It should be emphasized that many poultry farmers in Nigeria are less equipped to mitigate risks associated with consumption, income, assets and their health. This could lead to eventual collapse of the poultry industry if intensive and collaborative efforts are not made by all stakeholders to salvage the situation. In particular, the failure to rise up to the challenge of saving the industry could lead to a serious reduction in poultry production and protein intake of people. This results into malnutrition and ill health, lower productivity and output (Bamiro *et al.*, 2009) and consequently lower level of welfare of the farmers. This situation therefore justifies the need for a thorough assessment of existing risk coping strategies of the poultry farmers: Also, an understanding of how the farmers are affected and react to these risks will in due course aid in the design of improved risk management strategies. In Nigeria, the various Government policies and programmers have not encouraged farming households to help themselves. This is because a top-bottom approach is usually adopted. However, the outcome of these programmers depends to a large extent on the risk behavior of the small-scale rural farmers. More so, farmers react to policy incentives when allocating resources especially when faced with shocks from uncertainties under the safety first principle (Sekar & Ramasamy, 2011). Consequently, for sustainable and beneficial development, efforts must be geared towards an understanding of the disparities in difficulties faced by various farmers as well as their efforts at minimizing risks and coping with crisis. The poultry sector is characterized by a low level of production specialization, (FOA, 2006; Bello, 2011). These factors bring about uncertainty in poultry production; thus affecting the supply of poultry products in the markets. The events of a number of periods of price uncertainty and movement (volatility) have caused companies to fall into bankruptcy, farmers leaving the business, farmers falling into semi-permanent poverty traps and consumers to face spiraling costs for food and consequently, decline in the growth of the poultry sector (Adeyemo & Onikoyi, 2012). A large number of poultry farmers in Nigeria produce under conditions that are exposed to the vagaries of nature and limited infrastructure like storage facilities and power (Akanni, 2007). Nigerian farmers are increasingly faced with risk factors such as droughts, floods, diseases, pests, windstorms, accidents, fire, theft, damage and several other unplanned events whose occurrence cannot be readily predicted and therefore, poses serious threat to the success of farming enterprise in Nigeria. A general lack of accurate information on the risks sources and mitigation strategies in

the livestock sector, combined with insufficient veterinary and breeding services, non-existent or inadequate regulations concerning production, commerce and animal health control are also other important obstacles to the mitigation of risks in poultry production (FAO, 2008).

#### **Research Question**

- (I) What are the socio-economic characteristics of poultry egg farmers in the study area?
- (ii) How can we identify the attitude of the poultry egg farmers to observe risk factors?
- (iii) What are the influence of selected socio-economic variables on the risk attitude of the poultry egg farmers?
- (iv) What are the influence of farm inputs on Poultry income's of Farmers production on Risk attitude of Poultry Farmers?

#### **Objectives of the study**

The broad objective of the study is to analyze the risk assessment among cooperative poultry egg farmers in Ekiti East Local Government Area of Nigeria. The specific objectives are to:

- (I) Describe the socio-economic characteristics of poultry egg farmers in the study area,
- (ii) Identify the attitude of the poultry egg farmers to observe risk factors,
- (iii) Determine the influence of selected socio-economic variables on the risk attitude of the poultry egg farmers and,
- (iv) Examine the influence of farm inputs on Poultry incomes' of Farmers production on Risk attitude of Poultry Farmers

#### **Empirical Review**

Akanni & Akinleye, (2004). Poultry unit operators faced a variety of price, management and resources risks, which make their incomes unstable from year to year. Thirty (30) poultry units were randomly selected from each of Abeokuta South and Abeokuta North LGAs, which make up Abeokuta metropolis. Data were obtained on the market prices (and other relevant indices) of eggs and chicken. Budgetary analysis, linear programming and target-MOTAD models were used to analyzed the collected data. The gross margins for egg marketing enterprises were ₦6,360 and ₦26,200 respectively. The optimum marketing mix favored the marketing of chicken than it did egg marketing. An extra unit of battery cage and sales volume was capable of fetching a poultry unit operator ₦2,008.41 and ₦151.43 respectively. Along the risk efficiency frontier, marketing of chicken was found to be at a higher risk level of 0.5567 as against 0.3039 for egg marketing.

#### **Theoretical Review**

The collective action theory was propounded by Mancur Olson. The theory states that individuals under certain institutional arrangements and shared norms are capable of organizing and sustaining cooperation that advances the common interest of the group in which they belong, this means that individuals can organize and govern themselves to attain benefits which may not be individualized but which benefits the entire group. The theory is applied widely to groups, organizations, agencies, as well as community action. Olson saw collective action as a voluntary action taken by a group to achieve perceived

common needs of members which will help in reducing the challenges of the groups.

## Methodology

### Study Area

Ekiti East Local Government was one of the Sixteen (16) Local Government Areas in Ekiti State and it was created under the Local Government Edict of 1979. This took place as a result of the creation of Ondo – state under the administration of the late Head of State Gen. Murtala Ramat Muhammed. At its creation, the old Aiyekire District Council which has its headquarter at Aisegba-Ekiti and part of the then Ekiti North Division were carved to from Ekiti east Local Government with its headquarter located at Omuo-Ekiti. However, with the creation of more Local Government in 1996 as a result of the creation of Ekiti state by late Gen. Sanni Abacha, Aiyekire Local Government has been carved out of Ekiti East Local Government.

### Research Design

The research design adopted for this study is survey research design

### Sources of data

Two major sources of data referred to in the cause of this study, the conventional sources of primary and secondary data.

### Population of the study

Population for the study consists of over 400 poultry egg farmers in the study area.

### Sample size determination and Sampling Techniques

A multi-stage sampling technique was employed to select respondents. In the first stage, one division was picked out of three (3) divisions in Ekiti-State precisely Ekiti- North division. In the second stage, one (1) Local Government Areas was selected from the division namely: Ekiti-East Local Government Area. In the third stage, four (4) communities /villages were randomly selected from the chosen Local Government Area, the villages/ communities were purposively selected because of their high concentration of poultry production and marketing in those towns. In the last stage, thirty (30) poultry egg farmers were randomly selected from each towns making a total of 120 respondents.

### Instrument for data collection

The instrument for data collection is the structure questionnaire designed by the researcher in line with the objectives of the study.

### Methods and tools for data analysis

Both primary and secondary data were used for this study. Primary data was gathered using questionnaire that was personally administered and interviewed the sampled poultry farmers. Secondary data was gathered from relevant publications relating to poultry marketing. The study data used both descriptive and inferential statistics. Descriptive statistics such as; frequency table, percentage and mean, and inferential such as and safety first model and multiple regression analysis.

### Socio-Economic Characteristics of Poultry Egg Farmers

Descriptive Statistics tool was used to analyzed the data. This involves the use of frequency tables, percentage and cumulative frequency

### Attitude of the poultry egg farmers to observe risk factors in the study area

Simple descriptive statistics analysis was used to analyzed the data which involved the use of frequency distribution, percentage and cumulative frequency.

### Influence of socio-economic variables on the risk attitude of the poultry egg farmers

The safety first model was used to determine the influence of socio-economic variables on the risk attitude of poultry egg farmers in the study area.

The Safety - First Principle was used in the determination of the risk attitude parameter of poultry egg marketers in the study area. Estimation using the Safety-first principle permits consistent estimation of the risk-aversion coefficients for each marketer. This will enables us to ascertain the influence of farmer socio-economic characteristics on risk attitude.

This analytical tool was used to examine the relationship of some variables on income from poultry production. Multiple regression analysis was used to represent the Safety First Approach.

$$Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + e_i \text{---(i)}$$

Where:

Y = Income from sales of poultry eggs in Naira

a = intercept of the equation;

X<sub>1</sub> = Cost of housing (₦) (capital rent on land and premium cost);

X<sub>2</sub> = Average cost of stocked birds (₦)

X<sub>3</sub> = Cost of drugs and veterinary (₦)

X<sub>4</sub> = Labor cost (cost/Monday hired)

X<sub>5</sub> = Cost of feed (₦)

X<sub>6</sub> = Cost of transportation (₦)

e<sub>i</sub> = Error term i.e. random variable which captures factors outside farmer's control.

The risk aversion coefficient for each producer will be obtained. The income from the sales of birds and eggs from the result of the multiple regression analysis was used in the computation of the risk parameter. Following Moscardi and Dejanvy (1977), the risk aversion parameter K was used to classify sampled farmers into three (3) distinct groups as: low risk (0 < K < 0.4), intermediate risk (0.4 ≤ K ≤ 1.2), high risk (1.2 < K < 2.0).

The risk parameter (K) is computed as:

$$K = 1 / y (1 - \dots) \text{---(ii)}$$

Where

K = Coefficient of risk aversion (Risk Averse Category Y<sub>a</sub>: 0 < k < 0.4;

Risk Neutral Category Y<sub>n</sub>: 0.4 ≤ k ≤ 1.2; Risk Preference Category Y<sub>p</sub>: 1.2 < k < 2)

y = coefficient of variation = S<sub>y</sub>/u<sub>y</sub>

S<sub>y</sub> = the standard deviation of income

u<sub>y</sub> = the mean of income;

X<sub>i</sub> = Average cost of the most significant input for each respondent (feed)

P<sub>i</sub> = input price (market price of feed per kg);

P = market price of output (weight birds/eggs)

f<sub>1</sub> = Income elasticity of input.

The risk-aversion coefficients can be expressed as a function of input prices, marginal products, output risk, and marginal output risk, all of which are either observable or estimable. These risk-aversion coefficients will then be used as the dependent variable in regression to check the influence of socioeconomic variables on risk attitudes.

$$K = f(X_1, X_2, X_3, X_4, X_5, X_6, \dots) \quad \text{(iii)}$$

The computed risk attitude coefficient (K) was used to classify the respondents into three risk aversion groups:

Where: K = Risk attitude coefficient

X<sub>1</sub> = Age of Farmers

X<sub>2</sub> = Education level in years

X<sub>3</sub> = Farming Experience in years

X<sub>4</sub> = Flock size (Numbers)

X<sub>5</sub> = Gender of farmers

X<sub>6</sub> = House holds size (Numbers)

e<sub>i</sub> = error term

3.4 Examine the influence of farm inputs on Poultry incomes' of Farmers production on Risk attitude of Poultry Farmers Multiple regression analysis was used to represent the Safety First Approach.

$$Y = a + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + e_i \quad \text{(iv)}$$

Where:

Y = Income from sales of poultry products in Naira

a = intercept of the equation;

X<sub>1</sub> = Cost of housing (₦) (capital rent on land and premium cost);

X<sub>2</sub> = Average cost of stocked birds (₦)

X<sub>3</sub> = Cost of drugs and vaccine (₦)

X<sub>4</sub> = Cost Labour (cost/Manday hired)

X<sub>5</sub> = Cost of feed (₦)

X<sub>6</sub> = Cost of transportation (₦)

U = Error term i.e. random variable which captures factors outside farmer's control.

#### **Socio-Economic Characteristics of the Respondents**

The majority of the poultry egg farmers were 70.8% males while 29.2% were females respectively. The predominance of male farmers is an indication that modern poultry farming is generally labour intensive, has high level of risk involved and still a strenuous, tedious and time-consuming nature of poultry business discourages most prospective females into the business. The farmers' age bracket is mostly between 50 and 59 years. The study reveal that 11.6% had less than 30 years, 22.5% were between 30 and 49 years, 34.2% were in the age 50-59 years old while 21.7% fell between 60 and 69 years and 10.0% of the respondents were 70 years and above. 17.5% of the respondents had no formal education, 38.3% attended primary school, 18.3% of them obtained secondary school

certificate and 25.9% of the respondents had tertiary education this indicated that literacy level is moderately high among the poultry egg farmers, meaning that most of them can read and write. This findings was consistent with Bamiro *et al.*, (2013). The results also revealed that 28.3% had less than 10 years' experience, 53.4% had between 10 and 20 years while only 18.3% of the respondents had above 20 years of poultry egg farming experience. Moreover, this shown that they were highly experienced in poultry egg business because 81.70. % of poultry egg farmers had more than 10 years' experience in poultry egg enterprises. It is expected that the more the number of years farmers had in their farming operations, the more experienced they become. The result from the table above further revealed that about 62.5% of the poultry farmers had less than 5 households, 22.5% of them had between 5 and 10 households while 15.0 of the respondents had 10 and above households in the study area. With 5 as an average house hold size, this shown that respondents had moderate house hold size in the study area. Married men and women are likely to be relatively stable and focused in carrying on their poultry activities and the likelihood that they will have more people in the household who will contribute to labor input. It was shown that majority (about 45.8%) of the respondents had less than 500 stocked birds, 20.0% of the farmers had 501-1000 birds, 21.7% of them also had 1001-1500 birds and 10.8% of the respondents reared between 1501 and 2000 birds while only 1.7% of the poultry respondents had between 2001 birds and above. This implied that larger percent of them are small-scale poultry egg farmers. 23.3% of the respondents were single, 60.0% were married, 0.8% were widowed and 15.9% were divorced. The results indicated that majority of them have family responsibilities, so it is a most for them to cater for their family members. Credit availability is also known to help in the procurement of farm inputs on a timely basis and also in the adoption of output increasing innovations thereby increasing the efficiency of the farmers. Most of the farmers 23.3% source for their credit from cooperative societies, 1.7% of them source their finance from commercial bank, a total 8.3% of the farmers source for their finance through micro-finance banks, 0.8% source their credit from Bank of Agriculture and only 2.5% of the respondents source their credit from friends and relatives while a total of 63.4% source their own credit from personal savings. Based on the information received from the respondents, this results indicates that majority of the respondents source their credit from personal savings to start and finance their poultry egg enterprise.

**Table 1** Socio-Economic Characteristics of the Respondents

Variables		Frequency	Percentage (%)	Cumulative Frequency
Gender	Male	85	70.8	70.8
	Female	35	29.2	100
	Total	120	100	
Age (Years)	Less than 30	14	11.6	11.6
	30-49	27	22.5	34.1
	50-59	41	34.2	68.3
	60-69	26	21.7	90.0
	70 and above	12	10.0	100
	Total	120	100	
Educational Attainment	No formal education	21	17.5	17.5
	Primary	46	38.3	55.8
	Secondary	22	18.3	74.1
	ND/NCE	20	16.7	90.8
	HND/BSC	11	9.2	100
	Total	120	100	
Farming Experience (Years)	<10	64	53.4	53.4
	10-20	34	28.3	81.7
	>20	22	18.3	100
	Total	120	100	
Household Size	<5	75	62.5	62.5
	5-10	27	22.5	85.0
	10 and Above	18	15.0	100
	Total	120	100	
Flock Size (Number)	<500	55	45.8	45.8
	500-1000	24	20.0	65.8
	1001-1500	26	21.7	87.5
	1501-2000	13	10.8	98.3
	2001 and Above	2	1.7	100
	Total	120	100	
Marital Status	Single	28	23.3	23.3
	Married	72	60.0	83.3
	Widowed	1	0.8	84.1
	Divorced	19	15.9	100
	Total	120	100	
Source of Finance	Cooperatives	28	23.3	23.3
	Commercial Bank	2	1.7	25.0
	Micro Finance Bank	10	8.3	33.3
	Bank of Agriculture	1	0.8	34.1
	Friend and Relatives	3	2.5	36.6
	Personal Savings	76	63.4	100
	Total	120	100	

Source: Field Survey, 2023



**Risk attitude of poultry farmers**

Table 2, shown the varying degrees of risk attitude. The results of the distribution of respondents by risk aversion class was presented below. The result revealed the distribution of risk attitude categories highly skewed towards the risk averters. Majority about 70.0% of the farmers showed high risk aversion attitude, the risk aversion centered around  $K = 0.4$  while few respondents

with 5.83%, showed risk neutral and 24.17% of the respondents were risk preference. This implies that majority of the poultry farmers are risk averse, having an inclination to adopt risk mitigating measures in their poultry production. This implied that majority of them were taken high risk on their poultry business which could be traced to inadequate finance and low income.

**Table 2: Risk attitude category**

Risks attitude category	Frequency	Percentage (%)	Cumulative Frequency
<b>Probable risk category</b>			
Risk Averse category $Y_a: 0 < k < 0.4$	74	61.70	61.70
Risk Neutral category $Y_n: 0.4 < k < 1$	15	13.30	75.0
Risk Preferal category $Y_p: 1.2 < k < 2$	30	25.0	100.0
Total	120	100	

Source: Field Survey, 2023

**Influence of socio-economic variables on the risk attitude of the poultry egg farmers**

To determine the influence of Socio-economic variables of poultry farmer's on their attitude towards risk, a regression model was estimated. The result of the multiple regression analysis of the four functional forms showed that the linear log function was chosen because it gave the best fit on the basis of the value of  $R^2$  and conformity of the parameter estimates. Results of the analysis showed that R square was 0.69. This implied that 69% of the variation in Y (risk attitude) was explained by the specific independent variables. Out of six (6) variables four (4) were significant while two (2) variables; age and flock size were found not to be significant. Education level and household size were significant at 10% level, poultry farming experience and gender exhibited significant at 1% level. Only house hold size exhibited negative relationship with risk attitude, this indication showed that the higher the house hold size, the less risk averse the farmer will be, this implied that larger house hold size will help in term of capital to spend on hired labor, the larger the household size, the greater will be the total consumption needs of the farm family and thus,

the less willingness to bear risk. However, to the extent that larger household size also augments the total labor supply of the farm household and thereby enhances its income generating potentials, the effect of a larger household size on risk attitude may be neutralized, because large house hold will work for the farmers without any charges. Education, poultry farming experience and gender were found to be positively related to risk attitude, which revealed that as these factors increase the farmer's risk aversion will be increased with prior expectation. Years of poultry farming experience was positively significant at 1% which shown that as farming year's increase, the more risk averse the farmers become. Ogoke (2009) observed that the longer the years of farming experience, the more efficient the farmer becomes because the number of years that farmers spent in the farming enterprise may clearly give an indication of the practical knowledge he has acquired. This is an advantage to reduce farming risk which will help to boost production in any pre-determined period in poultry farming enterprise.

**Table 3: Influence of socio-economic characteristics on risk attitude of poultry farmers**

Variables	Regression coefficient	Standards error	T-value	
Constant	0.782	0.008	7.21***	
Age	0.823	1.863	0.44	
Education level	0.331	0.195	1.69*	
Farming experience	0.851	0.035	2.74***	
Flock size	0.670	0.087	1.56	
Gender	0.221	0.115	1.91*	
Household size	-0.512	0.146	-3.47	
R <sup>2</sup>	0.69			

Source: Field Survey, 2023

**Examine the influence of farm inputs on Poultry incomes' of Farmers production on Risk attitude of Poultry Farmers**

The estimation of the risk attitude coefficients, K, required estimation of income function for the study area multiple regression model was first estimated in which the relationship between the direct input vectors (x) and poultry income was created. The derived marginal productivity of feed (X<sub>i</sub>), together with the coefficient of variation of income, (used as a proxy for the income) and the market price of poultry products (P) and factor (P<sub>i</sub>) prices of feed per kg provided a value of K for each farmer using the safety first model. The results of the multiple regression analysis of the four functional forms showed that the simple log function gave the best fit of 81%. The adjusted coefficient of determination R-square was 0.81 indicated

that 81% of the variation in the income obtained or realized from the sales of poultry products (meat and eggs) was explained by the variations in the specified independent variables. Out of six (6) variables four (4) variables were statistically significant while two (2) do not significant at any level. The results shown that there was a positive and significant relationship between cost of drugs and medicine, cost of stock birds, cost of feed at 1% significance level and cost of labor was also displayed significant at 5% level respectively which were used in poultry production and the total income from poultry sales, while capital spent on housing and transportation exhibited insignificant on the income gotten from poultry production. The most statistical significant input was found to be cost of feed.

**Table 4: Multiple regression model of poultry farmers**

Variables (₦)	Regression coefficient	Standard error	T-value	23.3
Constant	-1.779	1.238	1.656*	25.0
Cost of housing	0.026	0.083	0.312	<b>33.3</b>
Cost of stocked birds	0.300	0.061	4.913***	34.1
Cost of drugs and vaccine	0.669	0.051	3.663***	36.6
Cost of feed	0.111	0.051	6.996***	100
Cost of labour	0.132	0.065	2.015**	
Cost of transportation	0.078	0.021	1.220	
R <sup>2</sup>	0.810			

Source: Field Survey, 2023.

**Conclusion**

The poultry farmers in the study area, with optional responses under poultry risk were either averse to such risks or preferred them. Poultry farmers that had risk aversion attitudes, have risk mitigating strategies through which they reduce risk adverse effects. The regression result support the proved that risk attitude of the poultry farmers could be influenced by their socio-economic characteristics. Particularly significant for that purpose were educational level, house hold size, poultry farming experience and gender. Based on the findings distinctively

showed that the poultry farmers in the study area exhibited the 3-probable categories of the risk attitudes obtainable. It was noted that the ratio of an individual's being a risk preferred to risk averse was 1 ratio 3 (1: 3).

**Recommendations**

Based on the findings of the study, the following recommendations are made:  
 i. Government at all levels and Non-governmental organizations should ensure effective policy formulation to reduce the risk faced and improve risk mitigation strategies.

- ii. Government and Non-governmental organizations should organize trainings, workshops and seminars on the effective risk mitigation strategies in poultry production for farmers to ensure risk mitigation
- iii. Poultry farmers should be encouraged by government, non-governmental organizations and development agencies to engage in many off-farm income generating activities as possible, as could, as this tend to increase their income level. This increase in off-farm income would lead to increase in reduction of risk on the output of poultry farmers.
- iv. The findings regarding the sources of risk in poultry by majority of the farmers should be useful for agribusiness firms in expanding and developing more poultry input companies, and also government institutions provide more robust veterinary services, drugs and vaccines to reduce the incidence of disease risk.
- v. Insurance companies entering the field of livestock insurance should be encouraged by the government to provide insurance to cover poultry farmers, the results of this study could be useful to them in ascertaining the extent to which the farmers are risk averse or risk taker to get a measure of demand for their products.
- vi. Poultry farmers should be more encouraged, educated and enlightened to join cooperative organizations in order to have access to better information, more access to credit to finance their enterprise that will help in poultry risk mitigation and further facilitate positive interactions especially on risk sharing. This will present a collective bargaining front, and serve as a conduct for transmitting government extension commendations to the farmers

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