



## Analysis of poultry farmer's willingness-to-Accept Compensation measure for risk averse mechanisms in Ikwerre local Government Area of Rivers State, Nigeria

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### Abstract

This study investigated the willingness-to-accept Compensation measures for risk averse mechanisms employed by poultry farmer's in Ikwerre local Government Area of Rivers State. A total of eighty respondents were randomly selected from seven rural communities in the study area. Data were collected using a structured questionnaire and personal interview. Descriptive statistics and contingent valuation method (CVM) i.e. willingness-to-accept model were used in the assessment. The result revealed that majority (37.5%) of the respondents fall between the age range of 41-50 years, and the major idiosyncratic and covariate risks faced by the respondents are high cost of inputs (13%) and Climate change risk (12.2%). Majority (56.3%) agreed to accept above one hundred thousand naira (N100, 000.00) as compensatory measure to avert risk in their farm business. It was also discovered that greater part of the farmers (35%) employed good vaccine administration/rearing of resistant breeds as best risk averts mechanisms. Therefore government, and non-governmental organizations, policy makers, industrialist and so on should assist poultry farmers to avert risk in their poultry business in the study area.

**Keywords:** Risk averse mechanism, poultry farmers, Ikwerre LGA, Rivers state, Nigeria.

### Introduction

Livestock represents an important source of high quality animal protein, providing about 36.5 per cent of the total protein intake of Nigerians. Nigeria's chicken population is about 150.682 million (UNDP, 2006) of which 25% are commercially farmed, 15% semi-commercially, and 60% in backyards. It is one of the highest investments in agriculture with net worth of N250 billion (<http://www.aicpnigeria.org>). Its production system is multi-layered as it deals with perishables products that are susceptible to various kinds of risks and uncertainties (Cross, 1996). It is important to note that every poultry farm has its own risk profile for the introduction of pathogens, subsequent development of disease, and spread of pathogens to other farms (Marangoni et al, 2004). This risk profile is determined by a complex interaction between the levels of infection in an area, the measures implemented on the farm to prevent disease, and other factors including the density of farms in the area and linkages with other farms and markets (Shane, 1997). Farm biosecurity measures reduce, but do not eliminate, the risk of introduction or onward transmission of pathogens; they include factors such as the location of farms, the physical facilities, and the operational technique of the farmer. However poultry farmers in Nigeria are faced with diverse forms of risks such as idiosyncratic and covariate risks. Idiosyncratic risks faced are death of birds, high costs of inputs and low poultry production, while covariate risks include outbreak of diseases, rainfall shocks and hard economic times (Abimbola et al, 2013). In the absence of any form of insurance and the almost inexistent credit markets, households have devised strategies to at least mitigate the effect of these risks on their livelihoods. The risk averse mechanisms employed by farmers include, drawing from personal savings, rearing of resistant breeds, restocking of birds and policing farms. It is important to note that risk averters are cautious farmers who prefer less risky sources of income or investments. These farmers will sacrifice some amount of income to reduce the probability of low income or losses which means that they forgo some possible gains to reduce the probability of losses. Averting risk does not mean that the individual farmer will bear no risk at all; it is a function of the number of birds kept and instead he/she must be compensated for taking risks by receiving a return that is greater than what would be received if the outcome of an action choice were certain (Ajetomobi & Binuomote, 2006). However use of fast growing hormones as one of the risk averts mechanisms can be detrimental to human health as it can lead to cancer as well as abnormality in growth like obesity and breast development in men. This is because many poultry products such as eggs and chickens these days are loaded with hormones, which can cause breast enlargement in men as well as women. These growth hormones inadvertently facilitate cell division, which can cause not only enlargement but the development of cancer as well (<http://gynoguide.com>).

Presently as awareness are created in the agricultural sector by government, people are beginning to establish poultry farms around living areas which exposes man to infectious diseases like bird flu and other pathogenic diseases. At this point it becomes pertinent to ask the following questions; what are the socio-economics characteristics confronting farmers in the study area? What are the different types of risks faced by the respondents in the study area? What are the various risk averse mechanisms employed by the respondents in the study area? How much are farmers willing to accept as compensatory measures to avert risk on their farm business in the study area?

## Material and Methods

This study was carried out in Ikwerre local government area of Rivers state Nigeria .Ikwerre local government area is one of the 23 local government area in Rivers state, Nigeria. It has a land area of 1,099 square kilometers with a population of 186,598(2005 National population Census) and headquarter is at Isiokpo. The communities under Ikwerre local government area are; Rumuekpe, AliminiObelle, Omudioga, Elele,Egbeda, Rukpokwu, Aluu, Igwuruta,Eneka. Ikwerre Local Government Area lies on latitude 4° 65 North and longitude 5° to 7° 12 East (GPS). (2005 National Population Census).

## Results and Discussion

Table 1 below, shows the sex distribution of the respondents, majority (72.5%) are male while age distribution shows that majority (37.5%) falls within the age range of 41-50 years. This has shown that bulk of the respondent's are in their active age range and able to take risks, unlike older farmers who are less prone to risks taking as emphasized by (Ajetomobi & Binuomote, 2006). Also majority (50%) of the respondents are married, while bulk (42.5%) has been in poultry business for 11 -20 years. The number of years of experience in poultry farming was positive and significant in the findings of Ayinde (2008). This implies that a year increase in the number of years of experience in poultry farming will increase the farmers' potential to cope with risk. This is expected since poultry farmers with longer years of experience are expected to have been familiar with the rudiments as well as the technicalities involved in poultry management. The educational status, shows that majority (37.5%) had secondary school education and are able to take risk. This was buttressed by Chinwendu et al (2012) who noted that education, age and experience were significant and positive determinants of risk attitude of farmers. Also Ajetomobi & Binuomote (2006) reiterated that higher levels of education have generally been associated positively with risk taking. Distribution of Household size shows that majority (60%) of the farmers have large family members of 4-6. Their large family size on risk taking is supported by the findings of (Ajetomobi & Binuomote, 2006) who emphasized that a larger family size implies greater capacity to shoulder risks. But this was refuted by the findings of Sekar and Ramasamy (2001) who indicated that an additional member to the household will reduce the poultry farmers' ability to take risk. This could be attributed to the fact that large sized households have higher consumption needs. Thus, given other constraints, the lower will be the willingness of the poultry farmer to take risk. Finally distribution of respondents according to their income status reveals that majority (42.5%) earns above ₦ 91000 yearly which has shown that farmers in the study area can bear risk. This results supports the findings of Abimbola et al (2013) who accentuated that proportion of non-farm to the total farm income had positive impacts on the risk-coping potentials of the poultry farmers in the study area.

Table 1: **Socio-economic characteristics of the respondents**

Variables	Frequency (%)	Variables	Frequency (%)
<b>SEX</b>		<b>Educational status</b>	
Male	58 (72.5)	No formal education	4 (5)
Female	22 (27.5)	Primary education	18 (22.5)
<b>AGE</b>		Secondary education	30 (37.5)
20-30	15 (18.8)	Tertiary education	28 (35)
31—40	24 (30)	<b>Household size</b>	
41—50	30 (37.5)	1-3	24 (30)
51—60	8 (10)	4-6	48 (60)
Above 60	3 (3.8)	7- 9	5 (6.3)
<b>Marital Status</b>		Above 10	3 (3.8)
Single	11 (13.8)	<b>Income status</b>	
Married	4 (50)	₦10,000 -₦50000	20 (25)
Divorced	9 (11.3)	₦51000-₦91000	26 (32.5)
Widowed	20 (25)	Above ₦91000	34 (42.5)
<b>Farming experience</b>		<b>Total</b>	<b>80 (100)</b>
1 – 10	20 (25)	-	-
11 – 20	34 (42.5)	-	-
21 – 30	21 (26.3)	-	-
Above 31	5 (6.3)	-	-

Source: **Researchers Field survey, 2016.**

Table 2 below reveals idiosyncratic risks (individual risks that affect only a particular individual in the community) and covariate risks (common risks that affect all members of a community or region). From the table below majority (13%) of the respondents faced high cost of inputs as their major risk, while (12.2%) encountered climate change risks (floods/ rainfall shocks). Majority of farmers (11.5%) are complaining of hard economic times/erratic policy changes as their major risk, whereas (8.4%) asserts income as their risk. It was only (8.0%) that records disease outbreak as risk they encountered. However (7.6%) claimed high rate of insecurity as a result of cult activities and kidnappings as major risk they faced in their area of study, while (7.3%) notes birds mortality as their major risk. Others are profit loss due to demand/supply gap (5%), loss of eggs (6.11%), inadequate credit facilities (6.9%), and health risk (1.9%), and location risks (1.14%), failure of equipment (2.3%), assets risk (3.1%), fire outbreak (0.76%), and finally consumption of hatchery waste (0.38%).

**Table 2; Distribution of respondents according to types of risks encountered in the study area.**

<b>Idiosyncratic Risks</b>	<b>Frequency</b>	<b>Percentage</b>
Insecurity risk	20	7.6
Income risk	22	8.4
High cost of inputs	34	13
Birds mortality	19	7.3
Profit loss due to demand/supply gap.	13	5
Failure of equipment	6	2.3
Assets risk	8	3.1
Theft	12	4.6
Loss of eggs	16	6.11
Inadequate credit facilities	18	6.9
Fire outbreak	2	0.76
Consumption of hatchery waste	1	0.38
Location risks	3	1.14
Health risk	5	1.9
<b>COVARIATE RISKS</b>		
Disease outbreak	21	8.0
Climate change risks(floods/ rainfall shocks)	32	12.2
Hard economic times/erratic policy changes.	30	11.5
<b>Total</b>	<b>262</b>	<b>100</b>

Source; Field survey, 2016

Multiple responses recorded.

Table 3 below shows the frequency distribution of respondents according to various risk averse mechanisms employed in the study area. Majority (35%) of the respondents attests that they averts risk by good vaccine administration/rearing of resistant breeds. This is because almost all producers wish to rear resistant breeds and inoculates their birds against pathogenic diseases which likely affects birds especially day old chicks. Loan/access to credit/personal savings (17.5%) are another forms of risk averts mechanisms employed by farmers. This supports the findings of Ayinde (2008) who noted that amount of initial capital outlay was found to affect the poultry farmers' ability to cope with risks positively and there should be increased access to credit facilities to enable the farmers increase their initial capital outlay. It was only (22.5%) who claimed to avert risk through diversification as it helps in times of farm failures. Other measures include contract producer/restocking of birds (3.8%), policing farms (12.5%) as emphasized by Ajetomobi & Binuomote, (2006).

**Table; 3Frequency Distribution of respondents according to risk averse mechanisms employed in the study area.**

<b>Risk averse mechanisms</b>	<b>Frequency</b>	<b>Percentage</b>
Diversification	18	22.5
Loan/access to credit facilities/personal savings	14	17.5
Good vaccines administration/rearing of resistant breeds.	28	35
Being a contract producer/restocking.	3	3.8
Good farm location	5	6.3
Belonging cooperative society	2	2.5
Policing farms.	10	12.5
<b>Total</b>	<b>80</b>	<b>100</b>

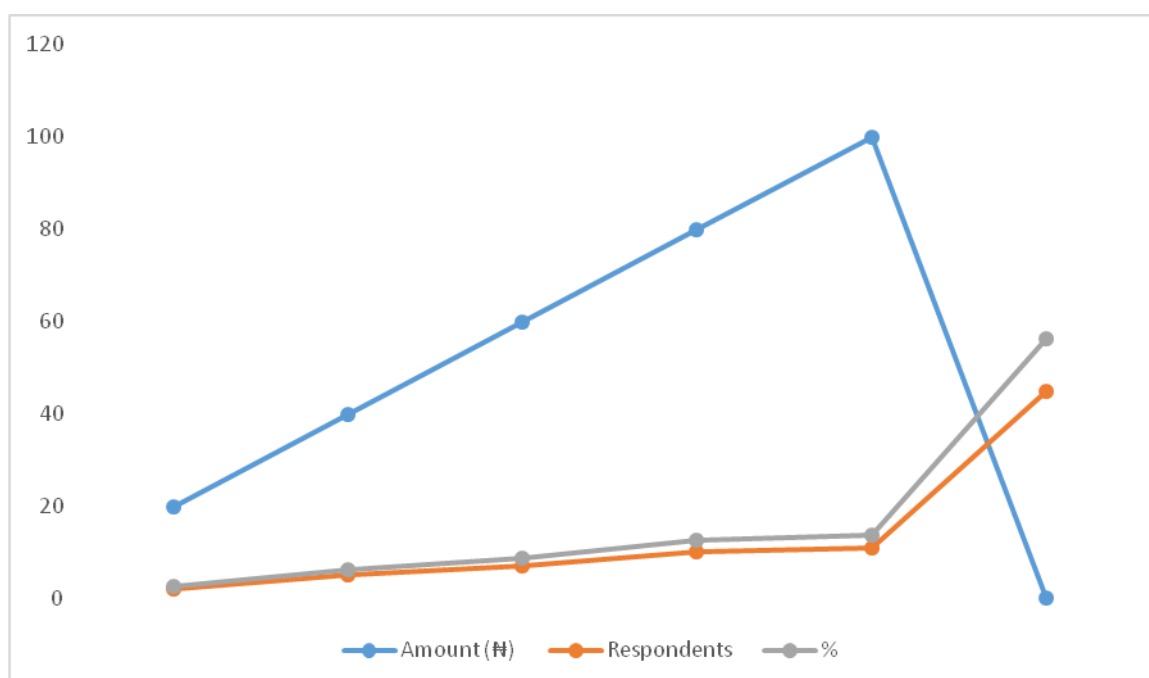
Source; Field Survey, 2016.

Table 4 below, shows that majority of the respondents (56.3%) are willing-to –accept above ₦100,000 to averts risk in their poultry business, their reason being that their stock size is up to 3000 birds. This was because amount of money poultry farmers are willing to accept depends on their stock size. The least of respondents (2.5%) are willing-to –accept ₦20,000 being that their stock size are small as they produced in backyards. This results has shown that, government agencies and international NGOs should assist poultry farmers averts risk in farm business.

**Table 4;** Frequency distribution of respondents according to amount they are willing-to-accept for risk averse mechanisms in the study area.

Amount in naira (₦) respondents are willing-to-accept for risk averse mechanisms.	Respondents	Percentage
₦20,000	2	2.5
₦40,000	5	6.3
₦60,000	7	8.8
₦80,000	10	12.5
₦100,000	11	13.8
Above ₦100,000	45	56.3
<b>Total</b>	<b>80</b>	<b>100</b>

Source; Field survey, 2016



Source: Field Survey 2016.

**Fig. 1** Graphical representation of respondent's willingness-to-accept risk aversion compensation in the study area.

## Conclusion

This study has shown that poultry farmers are in their active age and able to take risk, and the major risk encountered are high cost of inputs while most of them avert risk by good vaccine administration. Therefore the study concludes that willingness to accept compensation is a function of farmer's stock size.

## Recommendations

Based on the findings of this study, the following recommendations are outlined:

- ☐ Government and Non-Governmental Organizations, should assist poultry farmers to avert risk.
- ☐ Poultry farmers should be encouraged to diversify source of household income in order to address income loss associated with idiosyncratic and covariate risks.
- ☐ Poultry farmers should be encouraged to employ best production practices in order to minimize production risk.
- ☐ Vaccines should be scrutinized before administering to birds.

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