



Assessment of Risk and Uncertainties Among Poultry Farmers in Corcuera, Romblon

Ken N. Falculan

Department of Animal Science, College of Agriculture, Romblon State University, Odiongan, Romblon

Corresponding Author: Ken N. Falculan ken.falcula@lspu.ed.ph

ARTICLE INFO

Keywords: Financial Risk, Intervention, Poultry Farmers, Products, Strategies

Received : 02, February

Revised : 02, May

Accepted: 13, July

©2023 Falculan: This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

Poultry farming is known widely all over the country, especially since it is considered a source of income for Filipino farmers. This study used a descriptive method to assess the practices of poultry farmers in eliminating risks. Most of the respondents agreed on the different risks in managing poultry this is the following; environmental risks, production risks, health risks, market risks, and financial risks. Determinants are; disease outbreaks, poultry facilities, veterinary care, supply of electricity and water, inadequate knowledge of poultry raising, and high feed prices. Most respondents stated that; management and strategic intervention will be applied in managing small-scale poultry. Such interventions stated are; promoting the quality of poultry products, maintaining poultry health and sanitation, having strong communication and coordination between all those involved in poultry veterinary service, having personal savings, investing in quality feeds, and biosecurity obtained.

INTRODUCTION

Keeping poultry contributes ample development to household food security, the economic contribution to the province, and the country in general. It helps diversify income and provides quality food, energy, fertilizer, and a renewable asset in over 80 percent of rural households. It also creates substantial income-generating activity for the poultry farmer from sales of birds and eggs as a valuable source of protein in the diet (Falculan, 2021). Notwithstanding its contribution to food security, poverty reduction, and growth of the economy, the industry experienced numerous constraints, including competition between food and feed, dependence on the importation of exotic breeds, drought, an outbreak of diseases, high cost of inputs, low-quality chicks, inadequate market, and the like (Abigail Gbemisola Adeyonu, Abiodun O. Otunaiya, Enoch O. Oyawoye & Funmilayo A. Okeniyi, 2021).

THEORETICAL REVIEW

According to the Food and Agricultural Organization (FAO), 2006, the poultry industry faces several issues, including rising feed and feed ingredient prices, avian influenza and other dangerous diseases, floods, subpar production, fluctuating output prices, the global financial crisis, insufficient credit, and low levels of production specialization. Due to their concern over bankruptcy, entrepreneurs are hesitant to launch. According to Adeyemo and Onikoyi (2012), the enterprise experienced numerous periods of price volatility, which led to a decline in the growth of the poultry industry as a result of farmers leaving the industry and consumers forced to pay steadily rising food prices (including those for chickens and eggs). Risk management is crucial because of the serious danger that risk and uncertainties pose, which includes significant financial loss, psychological upheaval, total business failure, etc. Risk management is crucial because of the danger that risk and uncertainties pose, which includes significant financial loss, psychological upheaval, total business failure, etc. According to Legesse and Drake (2005), the risk is the effect of an unfavorable outcome that results from natural or human action. According to Kahan (2013), risks in livestock farming are commonly known into four categories: institutional (change in policy at the local, national, and international levels); financial risk (loan and its cost); and personal/human (accidents, illness, civil unrest, and death). Production risks in livestock farming include drought, heavy rainfall, diseases, and pests. Marketing risks include supply/cost of inputs, demand for a product/price, and cost of production. The selection of a risk management approach continues to be heavily influenced by appropriate risk perception. The rationale is that knowledge of the many current risk factors a farmer faces becomes the highlight in risk management. Farmers must become informed about risk and develop risk management skills to recognize issues and lessen their effects. Identification of farmers' risk perceptions is crucial to farm risk management. The farmer is a great respondent to understanding the nature, scope, and implications of the risks relevant to their agricultural operation. Farmers are also in charge of the duty of

assessing the risk management techniques that are accessible. The farmer has to make the right choices to control the risks involved in the agricultural business.

METHODOLOGY

Description of the Study Area

The study used descriptive research to gather information about the risk management and determinants of farm outputs among small-scale poultry farmers in the Municipality of Corcuera, Romblon. As stated by Aquino (2003) seeks to describe a systematic situation or area of interest factually and accurately. It covers 100 respondents composed of small-scale poultry farmers and owners in the Municipality of Corcuera, Romblon.

Sampling Procedure

Non- probability sampling methods were adapted to determine the number of respondents. Non-probability sampling is a method in which not all population members have an equal chance of participating in the study.

Data Collection

The survey questionnaire will be the instrument used in gathering the data needed.

Construction of the Questionnaire

The questionnaire used in this study is the product of reading. Instruments are organized and shown to the researchers' adviser, who went over each item. A modification might be established and ensure that each item would yield the information needed. The revisions will be made and incorporated, handed over to the adviser. After going through the questionnaire, the researchers were advised to prepare copies for validation.

Validation of the Questionnaire

Consultation was conducted by an adviser and experts in the field of agriculture were undertaken to ensure that no item was similar or duplicated. The instrument was verified by some thesis experts for comments, suggestions, and recommendations.

Administration of the Questionnaire

The instrument was handed to the respondent by the researcher. Retrieval of the questionnaire was conducted personally by the researcher. Scoring of response in the questionnaire was scored based on the Likert scale, with five as the highest score and one as the lowest score. An equivalent verbal interpretation has been conducted and analyzed.

Data Analysis

Quantitative data sets were analyzed using statistical analysis procedures of Statistical Package for Social Sciences (SPSS 2002).

RESULTS

Respondents Socio-Demographic Profile

Respondent Age

Poultry farmer means the age of the farmers was about 51 years, which indicates that respondents were relatively in their middle age.

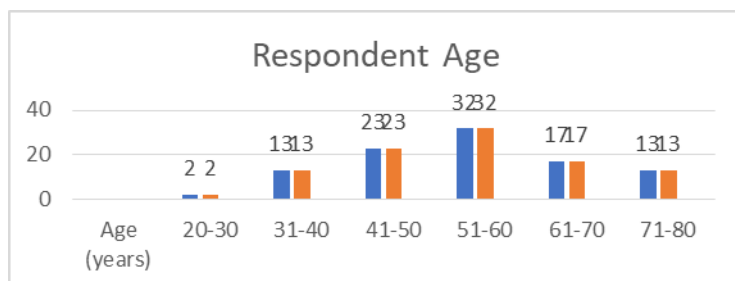


Figure 1. Respondent Age

Respondent Sex

The respondents requested to indicate their sexes on the questionnaire. A result of both males and females (about 50%) signifies that poultry farmers were not gender sensitive this resulted in both sexes engaged in poultry farming. A contradictory statement by Reyes (2000), stated that married men/women experiencing some difficulties in their lives because of these difficulties tend to find some alternative to survive.

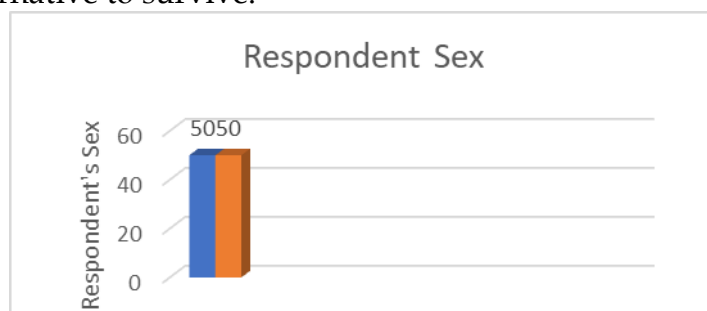


Figure 2. Respondent Sex

Level of Education

47 % respondents were elementary graduate on the level of education. Oladeji (2010) reported that maximum percentage of the poultry farmers (47%) had elementary school level education, followed by higher secondary level (28%).

Table 1. Level of Education

Educational Attainment	Freq	%
Elem Level	6	6
Elem Graduate	47	47
High School Level	15	15
High School Graduate	28	28
College Graduate	4	4
Total	100	100

Household Size

Majority (4-7 members) had the number on the family with fifty two percent (52%) which is considered as medium to large size family.

Table 2. Household Size

Household Size		
4 - below	42	42
4-7	52	52
8-11	6	6
Total	100	100

Source of Income

Majority of poultry farmers source of income (76%) was poultry farming, this was followed with other source coming from agriculture production (24%). This only shows that majority of poultry farmers (776%) adopted poultry farming as primary occupation. The finding of Babu (2013), reported that native chicken farming was primary.

Table 3. Source of Income

Source of Income		
Poultry Farming	76	76
Others	24	24
Total	100	100

Monthly Income

Respondent's monthly income ranges from P5000-P10000 with a frequency of 95 and obtained a percentage of 95%. This indicate that most of the respondents have the monthly income of P5,000-P10,000 from poultry production.

Table 4. Monthly Income

Monthly Income		
5000 – 10000	95	95
11000 – 15000	4	4
16000 – 20000	1	1
Total	100	100

Years of Poultry Farming

In terms of years of poultry farming, 5 years above got 84 which is the highest frequency with a percentage of 85% while 3-4 years got the lowest frequency of 2 and a percentage of 2. This means that most of the respondents were having their poultry farming for 5 years and above in the municipality.

Table 5. Years of Poultry Farming

Years involved in raising		
1 and below	5	5
1 To 2	9	9
3 To 4	2	2
5 and Above	84	84
Total	100	100

Risk Determinants

Financial risks and loss of capital got a weighted of 3.98, inadequate management obtained a weighted mean of 3.91, and debt loans got a weighted mean of 3.89. This was supported by the study of Doward et al. (2007) that using debt to fund agribusiness investments, crop seasonality, and unlimited savings exposes a company or business to financial or liquidity risk. Movement in stock prices with a weighted mean of 3.74 to which the respondents agreed. High initial investment obtained the lowest weighted mean of 2.15, and the respondent responded neutrally. The overall average in the financial risks was 3.53 where, the respondents agreed. This implied that this risk should be acknowledged by the poultry owner or those planning to have this kind of business should consider their financial stability.

Table 6. Risk Determinants

1. Financial Risk			
Loss of Capital	3.98	A	
Inadequate Management	3.91	A	
Movement in Stock Prices	3.74	A	
High Initial Investment	2.15	N	
Debt Loan	3.89	A	
Mean	3.53	A	

Risk in management of small-scale poultry in terms of environmental; climate change obtained the highest weighted mean of 3.98, noise got a weighted mean of 3.96, poor quality water with a weighted of 3.94, and use patterns and chemical pollution both obtained a weighted mean of 3.93 in which the respondents agreed. These environmental risks gathered total average weighted mean of 3.95. According to Akinbile et al. (2013) which identified vaccination failures and lack of water and feed as the top three climate-related risks facing poultry farmers. The study also shows a positive correlation between farmers' risk perceptions of climate change and the management strategies adopted.

Table 7. Environmental Risk

2. Environmental Risk		
Poor Water Quality	3.94	A
Land Use Patterns	3.93	A
Noise	3.96	A
Chemical Pollution	3.93	A
Climate Change	3.98	A
Mean	3.95	A

Health risk management is considered as major factor in poultry industry. The respondents agreed on the following health risks like disease-causing microbes with a weighted of 3.97, lack of access to health care got 3.88 nutritional deficiencies and impacted crop 3.87, foodborne illness 3.85, and infectious diseases from the poultry obtained a weighted mean of 3.54. In terms of health risks, the total average weighted was 3.82 and the respondents agreed. This implied that this type of risk was encountered by the respondents and they were aware about the health of their poultry as well as its effects to the health of themselves and this was supported by the study of Attian (2005) described that consumer confidence, product quality and safety, product variety, disease outbreaks and relapses will continue to pose major challenges to the poultry immunity, health and production. Likewise, production risk is one also the risk management for small-scale poultry.

Table 8. Risk Determinants

3. Health Risk		
Disease-Causing Microbes	3.97	A
Lack of Access to Health Care	3.88	A
Infectious Diseases from The Poultry	3.54	A
Foodborne Illness	3.85	A
Nutritional Deficiencies and Impacted Crop	3.87	A
Mean	3.82	A
4. Production Risk		
Outbreak of Disease	3.93	A
Poor Poultry Meat Quality	3.90	A
Drug and Vaccine Failure	3.85	A
Unpredictable Poultry Output	3.82	A
Heat Stress and Flooding	3.81	A
Mean	3.86	A
5. Market Risk		
Market Instability and Poor Sales	3.95	A
High Cost of Commercial Ration	3.88	A
High Fluctuations in Selling Prices	3.82	A
Non-Availability of Government Policies	3.59	A
High Diseases Incidences	3.41	A
Mean	3.73	A

Ways How to Manage Risks

Ways how the small-scale poultry farmers managed the risk when poultry diseases outbreak. As seen in the table, respondents strongly agreed in order to managed well the poultry must be clean and disinfected which obtained a weighted mean of 4.30. Respondents agreed on the others ways on how to managed the poultry such as; increased bird resistance through immunization procedures got a weighted mean of 4.15, providing a nutritious diet and plenty of water which got a weighted of 4.00, separating multiage of poultry birds, proper sanitation and isolation of sick poultry which both obtained a weighted mean of 3.99. Another procedure in identifying and treating sick poultry got a weighted mean of 3.98, vaccination with a weighted mean of 3.97, medication got 3.85. Adeyonu (2021) that farmers should employ disease prevention and financial management strategies to reduce the impact of various risks. Lastly, recalling chicken food item with the lowest weighted mean of 3.60 in which the respondents agreed. The overall weighted mean got 3.98 which means the respondents agreed on the ways on how the poultry will be manage when the risk strikes individual. This implied that the respondents were aware on how to cope up when a risk came up, they had their ways on how to manage it well. This was concluded by the study of Effiong et al. (2014) loosening pens and administering medicines and vaccines in a timely manner are key control strategies for poultry farmers, according to the report.

Table 9. The Way to Manage the Risk

Items	WM	DI
1. Vaccination	3.97	A
2. Identifying and Treating Sick Poultry	3.98	A
3. Separating Multiage of Poultry Birds	3.99	A
4. Proper Sanitation	3.99	A
5. Medication	3.85	A
6. Isolation of Sick Poultry	3.99	A
7. Providing a Nutritious Diet and Plenty of Water	4.00	A
8. Poultry Must Be Clean and Disinfected	4.30	SA
9. Increased Bird Resistance Through Immunization procedures	4.15	A
10. Recalling Chicken Food Items	3.60	A
Mean	3.98	A

DISCUSSION

This part allows you to elaborate on your results findings academically. You must not put numbers related to your statistical tests here; instead, you have to explain that numbers here. You have to compile your discussion with academic supports to your study and a good explanation according to the specific area you are investigating.

CONCLUSIONS AND RECOMMENDATIONS

Most respondents agreed on the different risk's management in the Municipality of Corcuera, Romblon, such as environmental r, production, health, market, and financial risks. Some determinants were categorized as the outbreak of disease, poultry facilities, veterinary care, supply of electricity and water, inadequate knowledge of poultry husbandry, and high price of feed. Most of the respondents agreed that these interventions and strategies was done in managing the small-scale poultry properly in Corcuera, Romblon promote the quality of poultry products, maintaining poultry health and sanitation, having strong communication and coordination between all those involved in poultry.

ACKNOWLEDGMENT

The author would like to thank the respondents in answering legibly the question here to, the Animal Science Department personnel in helping the author to expedite materials for this endeavor.

REFERENCES

- Abimbola OA, Omowunmi AT, Abayomi SO (2013) Risk Coping Behavior of Small Scale Poultry Farmers in Ogun State, Nigeria. *Asian J Animal and Veterinary Advances* 8: 786-7795.
- Adeyonu, A., Ajiboye, B., Isitor, S., & Faseyi, S. (2017). An analysis of the factors influencing access to credit by poultry farmers in Abuja, Nigeria. *Agriculturae Conspectus Scientificus*, 82(1), 55-62. <https://acs.agr.hr/acs/index.php/acs/article/view/1175>
- Adeyonu, A. G., Oyawoye, E. O., Otunaiya, A. O., & Akinlade, R. J. (2016). Poultry farmers' willingness to participate in national agricultural insurance scheme in Oyo state. *Applied Tropical Agriculture*, 21(3), 55-62. <https://www.futa.edu.ng/journal/home/journald/11>
- Adewumi BA (2008) Engineering education for agricultural and rural development in Africa. *Eur J English Education* 33: 321-330.
- Akinbile LA, Akinpelu OM, Akwiwu UN (2013) Risk Management Strategies Utilized by small scale poultry farmers in Oyo State, Nigeria: Implications for agricultural transformation. *J Agricultural Extension* 17: 141-146.
- Akinola DB (2014) Risk Preferences and Coping Strategies among Poultry Farmers in Abeokuta Metropolis Nigeria. *Global J Science Frontier Research: Agriculture and Veterinary* 14: 120-126.
- Attia YA, Al-Harhi MA, El-Shafey AS, Rehab YA, Kim WK. (2017) Enhancing tolerance of broiler chickens to heat stress by supplementation with vitamin E, vitamin C and/or probiotics. *Ann Anim Sci.* 17:1-15. doi: 10.1515/aoas-2017-0012
- Attia YA, Al-Khalifa H, Ibrahim MS, Abd Al-Hamid AE, Al-Harhi MA, El-Naggar A. Blood hematological and biochemical constituents, antioxidant enzymes, immunity and lymphoid organs of broiler chicks supplemented with propolis, bee pollen and mannan oligosaccharides continuously or intermittently. *Poult Sci.* (2017) 96:4182-92. doi: 10.3382/ps/pex17344
- Attia YA, Hassan SS. Broiler tolerance to heat stress at various dietary protein/energy levels. *Europ Poult Sci.* (2017) 81. doi:10.1399/eps.2017.171
- Babalola, D. A and Y. Babalola (2013). Economic Effects of Media Campaign against Pandemic Diseases: The Case of Bird Flu (H5N1) on Poultry Business in Ogun State, Nigeria. *Arabian Journal of Business and Management Review* 2(12):80-88.

- Barry, P.J and C.B. Baker (1984). Financial Response to Risk in Agriculture
Barry P.J (eds), Risk Mgt Agric., IOWA State University Press, Ames.183-198.
- Baruwa OI, Department of Agricultural Economics, Obafemi Awolowo University, Ile-Ife, Nigeria
- Ellis, F. (1998). Household Strategies and Rural Livelihood Diversification. *Journal of Development Studies*, 35(1), 1-38.
- Ellis, F. (2000). The Determinants of Rural Livelihood Diversification in Developing Countries", *Journal of Agricultural Economics*, 51(2), 289-302.
- Falculan, K. N. "Quality of Upgraded Layer Fed with Different Levels of Annatto Seeds (*Bixa Orellana* L.) as Feed Supplement Raised Under Different Housing Conditions." *Technium BioChemMed*, vol. 2, no. 2, 2021, pp. 125-138.
- Hasman H, Moodley A, Guardabassi L, Stegger M, Skov RL, Aarestrup FM. Spatype distribution in *Staphylococcus aureus* originating from pigs, cattle and poultry. *Vet Microb.* (2010) 141:326-31doi:10.1016/j.vetmic.2009.09.025
- Hayran, S., & Gül, A. (2015). Risk perception and management strategies in dairy farming: A case of Adana Province of Turkey. *Turkish Journal of Agriculture-Food Science and Technology*, 3(12), 952-961. <https://doi.org/10.24925/turjaf.v3i12.952-961.583>
- Hardaker, J., Huirne, R., Anderson, J. and G, Lien (2004). *Coping With risk in Agriculture*. Cambridge: CABI.
- Loghman R (2013) Factors Affecting Demand for Agricultural Crop Insurance in West Azarbijan Province. *American-Eurasian J Agric & Environ Sci* 13: 244-249.
- Mishra, A.K. and Morehart, M. (2001). Off-farm Investment of Farm Households: A logit Analysis. *Agricultural Finance Review*, Spring, 2001, 87-101. 45
- Mikhaylova LI (2005). "Risk Management in International Agricultural Markets" IAMO-Forum, Agricultural and Food Markets in Central and Eastern Europe, Seminar Paper 16-18 June, Halle (Saale).
- Nguyen TN, Hotzel H, Njeru J, Mwituria J, El-Adawy H, Tomaso H, et al. Antimicrobial resistance of *Campylobacter* isolates from small scale and backyard chicken in Kenya. *Gut Pathog.* (2016) 8:39. doi:10.1186/s13099016-0121-5

- Niu ZY, Liu FZ, Yan QL, Li WC. Effects of different levels of vitamin E on growth performance and immune responses of broilers chickens under heat stress. *Poult Sci.* (2009) 88:2101-7. doi: 10.3382/ps.2009-00220
- Njavro M (2009). "Risk Management in Agribusiness." Paper presented at Zagreb School of Economics and Management, June 5.
- Nyikal, R. A., & Kosura, W. O. (2005). Risk preference and optimal enterprise combinations in Kahuro division of Murang'a district, Kenya. *Agricultural Economics*, 32 (2), 131-140. <https://doi.org/10.1111/j.0169-5150.2005.00012.x>
- Ogoko CM (2009) Agricultural Insurance in present and future Agricultural Development in Niger State, Nigeria. *Agriculture Systems in Africa* 5: 45-50.
- Olayemi, J. K. (1995). Agricultural Policies for Sustainable Development: Nigeria's Experience. *Sustainable Agriculture and Economic Development in Nigeria*. A.E. Ikpi and J. K. Olayemi (Eds). Winrock International. 41-60.
- Pennings, J.M.E., O. Isengildina-Massa., S.H. Irwin., P.Garcia and D.L. Good (2008). Producers' Complex Risk Management Choices. *Agribusiness*, 24 (1), 31-54.
- Sadoulet, and Alain de Janvry (1995). *Quantitative Development Policy Analysis*. Baltimore: Johns Hopkins University Press.
- Schlundt J, Toyofuku H, Jansen J, Herbst SA. Emerging food-borne zoonoses. *46 Rev Sci Tech Off Int Epiz.* (2004) 23:513-33. doi: 10.20506/rst.23.2.1506
- Yusuf, T. M., Tihamiyu, S. A and Aliu, R. O. (2016). Financial analysis of poultry production in Kwara State, Nigeria. *African Journal of Agricultural Research*, 11 (8): 718-723