



ASSESSMENT OF THE PERCEIVED INCOME EARNED FROM POULTRY FARMING: IMPLICATIONS FOR POVERTY ALLEVIATION AMONG POULTRY FARMERS IN FEDERAL CAPITAL TERRITORY, ABUJA, NIGERIA

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ABSTRACT

The study focused on the assessment of perceived income earned from poultry farming and the implications for poverty alleviation among poultry farmers in Federal Capital Territory, Abuja, Nigeria. The study examined the socio-economic characteristics of the poultry farmers, evaluated the farm income realized from poultry farming, ascertained the farmers' level of satisfaction on income earned from poultry production and ascertained the level to which poultry farming has helped to alleviate the poverty status of the farmers. Simple random technique was used as the source for the 112 respondents that were used for the study. The data were sourced from primary and secondary sources. The primary data were analyzed with the use of descriptive and inferential statistics (Logistics regression and Binomial test). The results revealed that the average age, household size, farm size and farm experience was 43.30 years, 6 persons, 869 birds and 8.01 years respectively. Poultry farming was found to be profitable since they made an average income of ₦397,768.36. The farmers claimed that the income realized from poultry farming helped in alleviating their poverty level to a high extent. Socio-economic characteristics of the poultry farmers revealed that age, household size, farm experience, educational level and marital status have significant relationship with perceived income realized from poultry farming. The results also showed a significant difference between farmers that are satisfied and those not satisfied with the extent to which poultry farming has alleviated their poverty status. It was recommended that there is a need to coopt and focus on more young persons in the poultry farming business and that more females still need to be supported and encouraged into the poultry farming business so that the output and income realized will increase to meet more family needs and have more farmers' poverty level alleviated.

Keywords: Assessment of perceived income, Poultry farming, Poverty alleviation, Poultry farmers, Level of satisfaction, Poverty status.

INTRODUCTION

Livestock farmers have witnessed a steady increase in livestock production. With particular reference to poultry, the production of poultry products has been on the increase but this seems not to be felt in economic terms amongst most of the farmers (Salami, 2021). In many considerations according to The United States Department of Agriculture (USDA), poultry and its products have helped in providing man with high quality nourishment such as protein, vitamins and minerals, food supply, job creation and social security and as well contribute to the Gross Domestic Product of a nation (GDP). In another narrative, USDA stated that poultry, because of its enormous potentials, can be explored to bridge the animal protein shortage gap. Salami (2021) asserted that poultry production, though on the increase but the



increase seems not to be enough to meet local demand. The insufficiency is reflected in the wide gap between demand and supply of the product and this could be due to various issues encountered by poultry farmers in the course of production. The issue of concern is the cause of the decline in the production and income level of the people which is thus giving rise to the poverty level of the livestock farmers. The cause of the decline underscores why an assessment study is necessary.

Evaluation is a systematic review and assessment of the benefits, quality and value of a programme (Ajayi, 2005). Evaluation as a process is carried out on poultry farmers, purpose of production and the level to which poultry farming has helped alleviated the poverty level of the poultry farmers. This study therefore looks into the farming process and assesses the contribution of poultry to the farming operations of the livestock farmers in line with poverty alleviation of the people.

Mundi (2017) viewed poverty as that which derives from long and protracted inability to generate productive resources for the purposes of generating a desired level of output in order to enhance the realization of appreciable income. Mundi (2017) further stated that poverty is either relative or absolute. However, the choice of concern now is how to alleviate the poverty status of the farmers through poultry farming. Doing this would be achieved through advancing some poverty alleviation programmes that is genuine, well-coordinated and purposeful which the farmers must participate in. It is hoped that such kind of participation would lead to a situation where; the output of the farmers in line with poultry production will increase, leading to increased income and having the poverty level of the people shifting from where it was before to a reduced or zero poverty level. Through an evaluation exercise on the livestock farmers, what so ever that is causing low or inadequate production in poultry farming and then resulting to poverty amongst the farmers would be made know and remedied. For poultry farming to be able to adequately assist in the alleviation the poverty status of livestock farmers, the production capacity of the poultry farmers must be increased. For this to be achieved, the prospect, problems and potential area of improvement in poultry production must be identified and solutions proffered to mitigate their effects. It is on this note that the study seeks to assess the perceived income earned from poultry farming and its implications for poverty alleviation among poultry farmers in Federal Capital Territory, Abuja, Nigeria. Specifically, the study seeks to; determine the socio-economic characteristics of the poultry farmers in the study area, evaluate the farm income realized from poultry farming, ascertain the farmers level of satisfaction on income earned from poultry production, and; ascertain the level to which poultry farming has helped alleviated the poverty status of the poultry farmers households in the study area. The hypotheses of the study are:

- i. There is no significant relationship between poultry farmers socio-economic characteristics and perceived income earned from poultry farming in the study area.
- ii. There is no significant difference between poultry farmers that are satisfied and those that are not satisfied with the extent to which income earned from poultry farming has alleviated their poverty status.

MATERIALS AND METHODS

The Study Area

The study was carried out in two area councils of the Federal Capital Territory (FCT). The areas were Abaji and Bwari area councils. Federal Capital Territory was operationally brought to use as the capital seat of Nigeria in the year 1991. The land area and the population size are respectively 8000 Km² and 3,652,000 as at 2022 (NPC, 2022). Ishaya, *et al.* (2010)



stated that FCT lies between Latitude and Longitude 9.07° N and 7.339° E and that the area is located in the savannah region. FCT Wikipedia (2016) stated that the region is underlain mainly by the differentiated crystal rocks of the pre-Cambrian to early Paleozoic basement complex and cretaceous sedimentary formation. The soil was also described to be made up of parent materials which are coarse sand to silt clay in nature (FCT, Wikipedia 2016). The FCT has a wide temperature range across the year. Its temperature is as high as 37°C during periods of between March – May. On the other hand, it could respectively be as low as 15°C and 7° during the cold season (between July and August) and during the harmattan in November to February (FCT, Wikipedia 2016). The average rainfall of the area is 1632mm and it occurs between April – October. The vegetation is guinea in nature and it as well grow shrubs. Most of the people are agrarian in nature. The area is also known for some mineral deposit like clay, feldspar, tin, gold, iron, ore, etc.

Sampling Techniques

The population of the study comprised of poultry farmers operating in Abaji and Bwari area councils, Abuja. The sample of the study was drawn from two (2) stages. The first had to do with the simple random selection of eight (8) towns or communities in each of the local councils. Thus, making the number of towns/communities used for the study to be sixteen (16). The towns randomly selected from Abaji were: Ebagi, Bandagi, Dapala, Bago, Kebba, Nuku, Rimba and Yawule. While those randomly selected from Bwari area council were: Chikale, Duba, Bazango Bwari, Barago, Barapa, Byazhi, Dauda and Bunko. The second stage involved the random selection of eight (8) poultry farmers from each of the towns/communities and this gave a total of one hundred and twenty-eight (128) livestock. They were identified and administered with the question instruments. Out of this number, one hundred and twelve (112) that is, 87.5% of the question instruments that were found suitable were used for the study.

Source of Data and Data Collection Instruments

Data used for the study were obtained from both primary and secondary sources. The primary data were sourced from the poultry farmers with the use of structured questionnaire and interview scheduled which were respectively administered to the literate and illiterate farmers. The secondary data were sourced from related documented materials.

Validity and Reliability of Instruments

The instrument was validated with the use of the face content method where experts in the field of agricultural extension examined and certified the instruments as good enough for the study. Test-re-test method was used to test the reliability of the instruments and this was determined by administering the instrument at two different times within the period of four weeks to a similar group of poultry farmers and the data collected were analysed to produce a correlation value of 0.63. This implies that the instrument was reliable.

Data Analytical Techniques

Descriptive and inferential statistics were respectively used to analyze the objectives and hypotheses of the study. Inferential statistics include Logistic regression and binomial test. They were used to test hypothesis one and two respectively. Logistic regression was used to establish relationship between socio-economic characteristics of the poultry farmers and perceived benefits realized from poultry farming. It is expressed as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 \dots + b_7X_7 + e \quad \dots(1)$$

where;

Y = Perceived income (₦) (High perception = 1; Low perception = 0)

a = Constant

b_i [1 – n or 7] = Coefficients



$X_1 - X_7$ = Independent variables

e = Error term

The variables in the model were specified as:

Y = Perceived income (₦) (High perception =1; Low perception = 0)

X_1 = Gender (dummy: male = 1; female = 0)

X_2 = Age of respondents (years)

X_3 = Education (primary educ. =1; secondary educ. = 2 and post sec. educ. = 3)

X_4 = Marital status (single = 1, married = 2, divorced = 3, widow(er) = 4)

X_5 = Farming experience (years)

X_6 = Farm size (number of birds in the farm)

X_7 = Household size (number of people living and feeding together)

The binomial test was used to determine the significant difference in proportion of respondents that are satisfied and those not satisfied with the extent to which poultry farming has alleviated their poverty status. The formula for binomial distribution is given as follows:

$$b(x;n,p) = nC_x * p^x * (1-p)^{n-x} \quad \dots(2)$$

where;

b = binomial probability

x = total number of successes (satisfied or not satisfied)

p = probability of success on an individual trial n = number of trials

RESULTS AND DISCUSSION

Socio-economic Characteristics of Respondents

The result of the socio-economic characteristics of the respondents is shown in Table 1. From the Table, male farmers dominate (65.18%) poultry farming. The dominance may be adduced to the fact that they stand as head of households and decision maker in household economic activities. Similar result in line with male dominance of poultry production was observed by Okwukenye and Okoedo-Okojie (2018). Most (66.07%) of the poultry farmers were married. The dominance of married farmers in poultry is an indication that they are responsible people. The result concurred with that of Akinbili *et al.* (2008) who found dominance of the married people in poverty reduction projects that are related to poultry farming in Ekiti State. The average age of the farmers was 43.3 years with most (36.61%) of the farmers within the age range of 40 – 49 years. The result implies that poultry farming is dominated by young and active farmers who can stand the tedious nature of work involved in the farming process. The result is in agreement with findings of Kaine *et al.* (2018) who found the average age of famers to be 43 years.

Educational level showed that most of the respondents are literates with majority (46.43%) of them having primary school educational level. The result implies that most of them can read and can therefore handle their farming activities and challenges with very minimum assistance since education has a way of improving the performance of farmers in their farming activities. The average number of persons in the respondents' household was 6 persons with majority (58.03%) of them having between 4 – 6 persons as household size. The result is an implication of the fact that they have people who depend on them for economic survival. The result corroborates with that of Okwukenye and Okoedo-Okojie (2018) who reported similar household size amongst poultry farmers. The average size of the birds reared by the farmers was about 869 birds with most (28.57%) of the farmers handling between 600 – 899 birds. The result implies that they are big time poultry farmers and most likely be using the farm earnings to be meeting up with their economic livelihood. The farming experience of the farmers



revealed that most (36.61%) of them had between 5-9 years farming experience with the average being about 8 years. The result indicates that the farmers are experienced in the poultry farming business. Findings of Salami *et al.* (2021) revealed similar farming experience of poultry farmers in Abuja Municipal Area Council and so is in agreement with this finding.

Table 1: Socio-economic characteristics of respondents (n = 112)

Characteristics	Category	Freq.	%	Mean
Gender	Male	73	65.18	
	Female	39	34.82	
Marital status	Single	18	16.07	
	Married	74	66.07	
	Divorced	12	10.71	
	Widow(er)	8	7.14	
Age (years)	< 30	15	13.39	
	30 – 39	28	25.00	
	40 – 49	41	36.61	
	50 – 59	17	15.18	
	60 & above	11	9.82	43.30
Educational Status	No formal education	19	16.96	
	Primary education	52	46.43	
	Secondary education	28	25.00	
	Post-secondary educ.	13	11.61	
Household size range	1 – 3	18	16.07	
	4 – 6	65	58.03	
	7 – 9	19	16.96	
	10 – 12	10	8.93	5.56 = 6 persons
Farm size range (No. of birds in farm)	< 300	7	12.50	
	300 – 599	19	25.89	
	600 – 899	31	28.57	
	900 – 1,199	35	16.07	
	1,200 – 1,499	14	9.82	
	1500 & above	6	7.14	868.73 = 869 birds
Farming experience (years)	< 5	33	29.46	
	5 – 9	41	36.61	
	10 – 14	27	24.11	
	15 – 19	11	9.82	8.01

Source: Field Survey, 2022

Evaluation of Income Realized from Poultry Farming

The evaluation of income realized from poultry farming is shown in Table 2. The results revealed that the average income earned by the poultry farmers was ₦397,768.36 and most (36.61%) of the poultry farmers belong to this category (₦350,001 – ₦400,000). About 38.39% of the respondents earned less than ₦350,001, while about 25% of them earned more than ₦450,000. The result implies that poultry farming is a very profitable business in the study area. The result is supported by the assertion of Salami *et al.* (2021) which maintained that farming of poultry birds is profitable in the Abuja Municipal Area of FCT, Nigeria.



Table 2: Evaluation of income realized from poultry farming

Income range (₦)	Frequency	Percentage	Mean
100,001 - 250,000	17	15.18	
250,001 - 350,000	26	23.21	
350,001 - 450,000	41	36.61	
450,001 - 550,000	18	16.07	
> 550,000	10	8.93	397,768.36

Source: Field survey, 2022

Farmers Level of Satisfaction on Income Earned from Poultry Farming

Table 3 and 4, respectively, show the results on level of satisfaction derived by poultry farmers on income earned from poultry farming and the categorization of respondents on same level of satisfaction on income earned from poultry farming. Results on poultry level of satisfaction shows that majority (55.36%) of the respondents were averagely satisfied with income earned from poultry farming. In confirming this fact, the dichotomous categorization of the respondents based on level of satisfaction of income earned from poultry farming revealed that majority (77.68%) of them derived high level of satisfaction while few (22.32%) of them derived low level of satisfaction from poultry farming. This result is supported by the findings of Salami *et al.* (2021) which stated that poultry farming is profitable and therefore generates a high level of satisfaction amongst the farmers.

Table 3: Farmers level of satisfaction on income earned from poultry farming

Ranking	Frequency	Percentage
Highly satisfied	15	13.39
Averagely satisfied	62	55.36
Just satisfied	28	25.00
Not satisfied	7	6.25
Total	112	100.00

Source: Field survey, 2022

Table 4: Categorization of respondents' level of satisfaction on income earned from poultry farming

Categorization	Frequency	Percentage
High level of satisfaction	87	77.68
Low level of satisfaction	25	22.32
Total	112	100.00

Source: Field survey, 2022

Relationship between Earnings from Poultry Farming and Poverty Status Alleviation

Table 5 shows the level to which poultry farming has helped to alleviate the poverty status of the farmers. The result shows that most (52.68%) of the respondents indicated that earnings from poultry farming have helped to a high level in alleviating their poverty status. About 14.29% of the respondents indicated that their poverty status has been alleviated on a very high level. About 28.57% and 4.46 respectively indicated average and low poverty alleviation level via poultry farming.

On a dichotomous categorization (see Table 6), a very high fraction (75.89%) of the respondents indicated that their poverty status has been alleviated to a high level while the other fraction (24.11%) indicated low level of poverty alleviation status. The result indicated that



poultry farming is not only profitable but also help the farmers to a reasonable extent in alleviating their poverty status. Results of Salami *et al.* (2021) confirmed this assertion. They noted that poultry farming is still profitable to the farmers and earnings from the farming activities are used to meet with their economic needs despite some of the challenges that sometimes confront them.

Table 5: Relationship between earned income from poultry farming and poverty status alleviation

Level of poverty alleviation	Frequency	Percentage
Very high level	16	14.29
High level	59	52.68
Average level	32	28.57
Low level	5	4.46

Source: Field survey, 2022

Table 6: Dichotomous categorization of earnings from poultry farming and poverty alleviation

Category	Frequency	Percentage
High level	85	75.89
Low level	27	24.11
Total	112	100.00

Source: Field survey, 2022

Relationship between Poultry Farmers Socio-Economic Characteristics and Effects of Poultry Farming

This hypothesis states that: There is no significant relationship between poultry farmers socio-economic characteristics and perceived income earned from poultry farming in the study area. It was analyzed with the use of Logistics regression and the results are presented in Table 7. The model was adopted as the lead model because it has the highest number of significant variables, conformity to *a priori* and the coefficient of determination (R^2) (71.8%). From the computation, Chi – square computation was 40.52, the goodness of fit chi-square was 52.26 with degree of freedom = 55 at 5% probability level. The socio-economic characteristics considered here include; gender, age, education, household size, farm size, farming experience and marital status. Out of the above-mentioned variables, age, household size, marital status and farming experience of the farmers were significant at the 5% level, while farmers educational level was found to be significant at the 1% level.

Age of the poultry farmers had a beta coefficient of -4.628, standard error (SE) of -2.001 and an odd ratio of 2.14. The relationship was negatively signed and significant at the 5% level. The implication of the result is that an increase in farmers age will lead to a reduction by 2 times the perceived income earned from poultry farming. This assertion is in agreement with the findings of Okwuokenye and Petu-Ibikunle (2021) that described young farmers as being more venturesome and willing to take risk more than older farmers and thereby earning more income than their older counterparts. The beta coefficient, standard error and odd ratio of educational status of the farmers was 2.194, 0.427 and 3.05, respectively. The relationship presented was positive and significant at the 1% level. It simply implies that an increase in educational level will increase by 3 times the perceived income earned from poultry farming. Okwuokenye and Petu-Ibikunle (2021) result concurred with the result as they claimed that educational level of farmers

enhances farmers willingness to adopt improved farm practices that results to increase in productivity.

Household size of the farmers presented a beta coefficient of 3.118, standard error of 0.381 and an odd ratio of 2.61. The relationship was positive signed and significant at the 5% level. The result inferred that larger households will result to increase by about 3 times in the perceived income earned from poultry farming on their households. A larger household will make available more hands for farm work that may translate to higher effects on farmers households. Mohammad *et al.* (2011) noted that large household size helps to cushion the effect of poverty on them through increased farming activities.

Table 7: Relationship between livestock farmers socio-economic characteristics and effects of poultry farming

Variables	Coefficient (b)	Standard Error (SE)	t-value	Prob. Level	Odd ratio
Constant	10.285	3.001	1.92	0.104	
Gender	3.914	2.336	1.37	0.012	1.29
Age	-4.628*	-2.001	0.16	0.28	2.14
Educational status	2.194**	0.427	1.92	0.007	3.05
Household size	3.118*	0.381	0.27	0.172	2.61
Farm size	- 6.115	-3.725	0.14	0.256	1.08
Farming experience	5.529*	1.804	1.40	0.312	2.41
Marital status	4.725*	1.583	1.88	0.615	2.71

Chi-square < 40.52; df = 7; p < 0.05; Goodness-of-fit chi-square = 52.26; df = 55; p > 0.05; Pseudo coefficient of determination = 0.716 (71.8%).

Farmers farming experience was positively signed and significant at the 5% level. The result presented values of 5.529, 1.804 and 2.41 as its beta coefficient, standard error and odd ratio respectively. The implication of the result is that an increase in farming experience will result to 2 times increase in the perceived income earned by the poultry farmers. It is hoped that with more experience in poultry farming, the farmers will be able to hand and manoeuvre farming activities in the best direction that will result to better performance of the farm. Abegunde (2004) agreed with this finding. The author asserted that farmers with more farming experience are likely to use their experience to generate more farm income from their farming activities. The respondents' marital status was also found to be positively signed and significant at the 5% level. Its beta coefficient was 4.725 with a standard error of 1.583 and odd ratio of 2.71. The dominance of married farmers in poultry farming is an indication that they are responsible people who are likely to quickly take decisions on the effective use of resources that could lead to about 3 times more income in the farming business. Results of Okwuokenye and Okoedo-Okojie (2018) agrees with this assertion about poultry farmers.

Proportion of Poultry Birds and Other Livestock Reared by the Livestock Farmers

Hypothesis two shows the relationship between the proportion of poultry farmers that are satisfied and those that are not satisfied with the extent to which income earned from poultry farming has alleviated their poverty status. The hypothesis was analyzed using Binomial test and the result is presented in Table 8. From the result, a larger proportion (70.54%) of the farmers were satisfied with the extent to which poultry farming has alleviated their poverty status. On the other hand, the other fraction (29.46%) of the farmers were not satisfied with the to which poultry farming has alleviated their poverty status. The result showed that there is



significant difference between these set of farmers. The result was statistically significant at the 1% level of probability. For this reason, the alternative hypothesis was accepted and it states that there is a significant difference between the poultry farmers that are satisfied and those that are not satisfied with the extent to which poultry farming has alleviated their poverty status. The result implies that poultry farming is helping the farmers in meeting up with the economic needs and household welfare of the farmers. This result is in line with that of Nmadu *et al.* (2014) who found that poultry production is profitable in Abuja even when the farmers resources have not been efficiently used.

Table 8: Proportion of poultry farmers level of satisfaction with poverty alleviation status

Level of satisfaction	Frequency	Proportions	Prob. Level
Satisfied	79	0.71	0.001
Not satisfied	33	0.29	
Total	112	1.00	

Source: Field survey, 2022

CONCLUSION AND RECOMMENDATIONS

The perceived income earned by poultry farmers was said to be high and this was asserted from the average farm income of ₦397,768.36 earned by the farmers. The farmers claimed to have a high level of satisfaction with the income earned and such income was judged to be able to alleviate the poverty status of the farmers. This goes to say that poultry farming is a profitable business that can help to push the people who effectively engage in it out of poverty net. Also, favourable socio-economic characteristics can go a long way in improving the income earned by the farmers. The following recommendations are advanced based on findings:

1. There is a need to coopt and focus on more young persons in the poultry farming business. This has become necessary since results on farmers age showed negative relationship with perceived income earned by the poultry farmers.
2. Results revealed that poultry farming is dominated by male farmers. Females still need to be supported and encouraged into the poultry farming business so that the output and income realized will increase to meet more family needs and have more farmers poverty level alleviated.
3. Farmers educational level has a way of enhancing the efficient use of farm resources. Against this background, farmers educational level needs to be improved through training on input use. It is hoped that doing this will go a long way in improving the income earned from farming activities.

REFERENCES

- Abegunde, A. A. (2004). Community based organizations in the sustainable development of the rural areas in Atiba L.G.A., Oyo State. *Journal of Institute Town Planning*. 17: 1 – 14.
- Ajayi, A. R. (2005). The role expectation of agricultural extension in poverty alleviation in a democratic and deregulated economy. *Proceedings of the 9th Annual Conference of AESON*, Obasemi Awolowo University, Ile – Ife, Osun State, Nigeria. Pp 111 – 117.
- Akinbili, L. A., Hussain, L. A., Yekinni, O. T. (2008). CDAs/CBOs participation in community-based poverty reduction projects in selected communities in Ekiti State, Nigeria. *Nigeria Journal of Rural Sociology*. 8(1): 41 – 47



- FCT Wikipedia, the Free Encyclopedia Participation (decision making). Retrieved at: <http://en.https://www.britannica.com › topic › poultry-farming>. Accessed on 13th April, 2022
- Ishaya, S., Dawan, P. D. and Ngozi, U. O. (2010). Impact assessment of urbanization on land cover in Abuja Municipal and Bwari Area Councils of the FCT using Geo-Information Techniques. *International Journal of Agricultural and Rural Development*. 1(4): 106 - 114.
- Kaine, A. I. N., Iku, J. E. and Ebigwai, S. J. (2015). Analysis of determinants demand and supply of maize in Aniocha North Local Government Area, Delta State, Nigeria. *International Journal of Sustainable Agricultural Research*. 2(1): 12 – 21.
- Mohammad, H.U., Umar, B.F., Abubakar, B.Z. and Abdullahi, A.S. (2011). Assessment of factors influencing beneficiary participation in Fadama II project in Niger State, Nigeria. Retrieved at: <http://www.ajol.info/index.php/njbas/article/view/73885>. 25th February, 2021.
- Mundi, N. E. (2017). Agricultural Innovations and Rural Poverty Alleviation in Nigeria, 11th *Inaugural Lecture*, Delivered at the NOUN Headquarters, Jabi, Abuja, on 12th May, 2017
- Nmadu, J.N, Ogidan, I.O and Omolehin, R.A. (2014). Profitability and resource use efficiency in poultry egg production in Abuja, Nigeria. *Kasetsart Journal – Social Sciences*. 35(1): 134 – 146.
- National Population Commission of Nigeria (web) National Bureau of Statistics, 2022. Retrieved at: <http://www.citypopulation.de>php.ni.....> On 25th April, 2022.
- Okwuokenye, G.F. and Okoedo-Okojie, D.U. (2018). Influence of gender in access to credit facilities among poultry farmers in Edo State, Nigeria: implications for communication. *Journal of Agriculture, Food and Environment*. 5(2): 50 – 61.
- Okwuokenye, G.F. and Petu-Ibikunle, A.M. (2021). Assessment of adoption of agrochemicals by cucumber farmers in selected local government areas in Kaduna State, Nigeria. *ADAN Journal of Agriculture*. 2(1): 59 – 69.
- Salami, S. A., Ewulo, B. and Adewole, W. A. (2021). Farmers perception on the benefits of poultry production in Abuja Municipal Area Council, Federal Capital Territory, Nigeria. *Nigeria Agricultural Journal*. 52(1): 96 – 101.