



POULTRY FEED MARKET ANALYSIS IN A RURAL PERI-URBAN AREA OF AKWA IBOM STATE, NIGERIA

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ABSTRACT

The study evaluated the poultry feed market situation in the rural peri-urban area of Akwa Ibom State, Nigeria. The study analyzed demand trend of the different types of feed in the study area, determine the supply pattern of the different types of poultry feed in Ikono Local Government Area. Simple random sampling technique was used to select 160 farms and structured questionnaire was administered on 144 farmers that sufficiently responded to the questionnaire for inclusion in the statistical analysis. Descriptive statistics such as mean, frequency, percentages, incidence index analysis and factor analysis were used to analyze the specific objectives. Analysis of the feed brand preference among poultry farmers in the study area showed that 69% of the farmers used Top Feed, about 19% of the farmers used Hybrid feed while 7% of the farmers used Amo Byng Feed. It was gathered that Top Feed was the most preferred feed used in Ikono Local Government Area. The study therefore concluded that to enable farmers maximize profit, there is need for them to choose feed brands that are easily available in the shop, support growth and fast weight gain. Recommendations were directed towards manufacturer's improvement in production, effective distribution methods and access to credit facilities.

Keywords: Poultry, Feed, Marketing, Rural, Peri-urban, Analysis.

INTRODUCTION

Poultry production is very important to the economic, social development and health, of any nation because it alleviate food security problems, creates employment for the people and improves their level of income (Othman *et al.*, 2018). When compared with other forms of livestock farming, poultry farming has the following well established advantages: Short generation interval and rapid fecundity, rapid turnover of invested capital, the space requirement for rearing is small, the initial capital for investment in poultry production is small (affordable even by rural dwellers) as said by Othman *et al.* (2018).

Researchers in Nigeria have confirmed that, poultry feeding constitutes about 70% of the total cost of poultry production. The choice or preference of good nutrition reflects on the health and performance of the bird. Feeding recommendations varies depending on type of birds such as broilers, Layers and the age, Akpantaku *et al.* (2006), Munyori *et al.* (2014), Njoroge *et al.* (2015), Etuk *et al.* (2018) and Shaib-Rahim *et al.* (2020). The available poultry feed brands in Ikono LGA include Hybrid feed, Top feed, Amo Byng feed, Livestock feed and Vital feed. All the brands of feed are formulated with various ingredients depending on the nutrient requirement of the birds.

In Nigerian, feed cost alone account for over 70% of the total cost of livestock and poultry production and it has serous negative effect on the profitability of the business (Shaib-



Rahim *et al.*, 2020). If the cost of feed could be lowered, the profit margin of livestock and poultry farmers would increase. Furthermore, lower feed cost could reduce the poultry products such as table eggs and meat thereby increasing the per capita consumption of animal protein. Nigerian poultry farmers who depend on commercial feed for their birds, have been facing several problems such as increasing feed cost, deteriorating feed quantity and inconsistency in the weight of bagged feeds.

The most common feeding system in practice by Nigerian poultry farmers depends on available commercial feed. Commercial feed mills currently produce two sets of meal for the broiler chickens; broiler starter mash (high protein, low energy) and broiler finisher (high energy, lower protein) diets (Etuk *et al.*, 2018). Considering the high cost of poultry feeds in recent time, there is the need to focus on efficient feed utilization in order to maximize profits. Also given the increasing number of people especially those not skilled in feed formulation and production venturing into poultry business, there is no doubt that there is a high demand for commercial feeds (Okpanachi *et al.*, 2018).

The marketing of poultry feeds in Nigeria is another important factor in the economic value chain of poultry industry. Transportation due to poor road network and regular increase in the price of petrol is one of the challenges. According to (Imoudu and Afolabi 2002), market structure in Nigeria's agriculture is most often not of the perfect competitive type due to collusive tendencies of the sellers through the formation of market associations. Chavez (2014) observed that market structure is based on the characteristics of a market relative to buyers and sellers and their relationships.

According to Munyori *et al.* (2014), supply of animal feeds is volatile as a result of the seasonality of the inputs, and the factors affecting the supply of animal feeds include inefficient marketing system, low availability and poor quality of raw materials, processing methods used in handling and storage conditions among others. The strategies adopted by marketers aimed at maximum satisfaction revolves around key factors of marketing mix products, price, place and promotion. The volume of feeds demanded and supplied in the market is largely determined by the price. The prices attached to these feeds by the manufacturers depends on the cost of the ingredients used in production. Marketing of any product is influenced by its quality, Njoroge *et al.* (2015). Mutua and Kahi (2010) noted that, use of lower ingredients cost often corresponds to low feed quality which violates regulatory specifications. In view of the fact that, there are several brands of poultry feeds available in the market with their different qualities: Gajana *et al.* (2011) stressed the importance for farmers to use high quality feed that will increase the performance of the birds, aimed at optimizing feed efficiency and therefore performance of the broiler chicken and profit on the farm.

The quality of feed in high demand and use by poultry farmers brings in the question of what has been the preference and choice trajectory. The pattern of demand will influence the magnitude and direction of market forces, as critical factors like pricing effect will impact on the market share among producers of poultry feeds. High quality of feed with well-balanced nutritious ingredients are likely to be costlier than the low-quality feeds, whether the feed is prepared by the farmer or commercial feeds from the shop. Shaib-Rahim *et al.* (2020) observed that, feed formulated by the poultry farmers are often more nutritious than the commercial stuff though it takes more time to produce it. Due to high cost of quality feeds materials and relative less capacity in technical and scientific proficiency in mitigating anti-nutritional issues. Some poultry farmers may decide to go for less expensive low-quality feeds, because they can no longer afford the good quality feeds.

The consequences of the above may be quite overwhelming to the poultry farmer with a negative index to poultry production. Among several challenges facing feed milling industries, the feed production supply chain might experience poor marketing scenarios. Based



on the above-mentioned concerns, this study evaluated the choice preferences of poultry feed types dynamics experience, which influence the poultry feed market dynamic among farmers in Ikono Local Government Area, Akwa Ibom State. Specific objectives were to analyse the demand trend of the different types of feed in the study area and ascertained the supply pattern of the different types of poultry feeds in Ikono Local Government Area.

The concept of demand for any commodity is always influenced by so many factors. These factors include need for the commodity, quality, price affordability and availability among others. According to Nigerian finder, 2021, the feeds largely available in Nigeria include the following: Animal Care Feeds, Breedwell Feeds, Amo Byng Feeds, Top Feeds, Hybrid Feeds, Ultima/ Chikun Feeds, Vital Feeds and Livestock Feeds. Demand for livestock feeds as a result of increasing market for livestock product in developing countries, due to increasing population growth, rapid urbanization and improved income (Abdullah *et al.*, 2011). It follows that, poultry farmers need these feeds for their birds. Another factor that may come to the mind of the farmer in terms of the demand or preference for poultry feed is quality.

As a matter of fact, feed costs as well as the quality of the feeds are among the factors which dictate farmer's preference for commercial or self –compounded feed (Shaib-Rahim *et al.*, 2020). This is because low price quality feed is critical for expansion of poultry industry. For performance and good health, birds need a steady supply of energy, protein, essential amino acids, minerals, vitamins and most importantly water. It is therefore important to use high quality feed that will increase that performance of the birds aimed at optimizing feed efficiency and therefore performance of the broilers chicken and profit on the farm (Gajana *et al.*, 2011).

Price is an important determinant of the demand for a commodity. It is obvious that the poultry farmers will go for relatively cheap feeds, but of high quality. The law of demand shows the relationship between the quantity demanded and the price. The quantity of a commodity demanded at a unit time is a function of its price. This implies that the amount demanded of a commodity increases with a fall in price but diminish with a rise in price (Okoro, 2010)

MATERIALS AND METHODS

The Study Area

The study adopted a non-experimental research design of a descriptive survey research type. The study was carried out in Ikono Local Government Area (LGA) of Akwa Ibom State, it has a land mass of approximately 407.67 Sq.km and a population of 131,673 according to the 2006 national headcount, which is projected to 200,011 in 2021 with an annual increase of 3.46%. The climate is tropical and characterized by the rainy and dry seasons, with annual average rainfall of 350 mm. The people of Ikono are majorly farmers (Ukpong *et al.*, 2001).

Method of Data Collection

The population of this study comprised all poultry farmers spread across Ikono Local Government Area of Akwa Ibom State. Based on the list of poultry farmers obtained from the Poultry Farmers Association in Ikono, there were about 277 poultry farms. Primary data were used in this study. The primary data were generated with the aid of a validated structured questionnaire and from anecdotal records of only feed brands marketers in the local government area. The copies of structured questionnaire were distributed to poultry farmers, who were willing or indicated interest to participate in the research. The instrument was designed to elicit responses and generate data on the feed brand preference. The validity of the scales used in this study was assessed for content, construct and face validity.

Sampling Procedure

The simple random sampling technique based on the list of poultry farmers obtained from the Poultry Farmers Association in Ikono LGA of Akwa Ibom State in June 2021. In determining the sample size for this study, we adopted the Krejice and Morgan (1970) Table.



The selection of the sample size only requires an accurate matching of the appropriate cell in the sample size column to the corresponding population column. A simple random sampling by lucky deep was used to select 160 farms as sample size but 144 questionnaires were considered sufficiently responded for inclusion in the statistical analysis. Thus, a total of 144 respondents constituted the sample size of the study.

RESULTS AND DISCUSSION

Poultry Farming Characteristics of the Farmers

Table 1 shows the poultry farm profile of the farmers in Ikono LGA, it is observed that majority, 120 of the farmers in Ikono Local Government Area have small flock sizes ranging from 50-640 birds, representing about 83% of farmers in the study area. Only few of them, 24 have poultry farm with a flock size within the range of 640 to 3002 birds representing 16.7% of the farmers. This may be due to their low level of income. The distribution of respondents by labour size revealed that only four (4) of them hired three (3) labourers representing about 3%, 22 of the farmers hired two (2) labourers representing 15%, 46% of the farmers did not hire any labourer representing about 32% of the respondents while majority of them, 72 of the respondents hired only one (1) labourer representing 50% of the total respondents. This implies that majority of the farmers in Ikono LGA have the capacity to employ only one person, mostly a close relative to help them in running their poultry farms. This may also be as a result of their low-income status.

On the farm employment approach, the distribution of respondents indicated that about 46 respondents representing 32% hired no labour hence no payment approach, three respondents adopted both daily pay and permanent staffing representing 2%, about 29 respondents representing 20% adopted permanent staffing approach, while 65 respondents representing 45% adopted daily pay employment approach. This means that the farmers in Ikono do not employ much labour due to their small flock size.

For broiler bird farmers, the distribution of respondents indicated that 52 respondents didn't raise broilers, while 91 farmers raised broilers representing 36.8% and 62.2% of the population, respectively. The distribution of respondents also indicated that 80 respondents representing about 56% of the population raised layers while 64 respondents representing about 44% of the total population didn't raise layers and this influence the choice of feed for their birds.

The distribution of respondents based on users of self-compounded feed showed that 132 respondents representing 92% did not use self-compounded feeds. While only 12 respondents representing 8% used self-compounded feed. This implies that majority of poultry farmers in Ikono relied on Commercial feed for their birds. Hence, they need to take different factors into consideration in deciding the right feed type for their bird. The use of commercial feeds by respondents in the study area is in line with Etuk *et al.* (2018). Commercial feeds often contain anti-biotics and arsenicals to promote health and improve growth.

Table 1: Respondents' Poultry farming Activities

Activities	Frequency (n = 144)	Percentage	Mean
Flock size			440
50 -640	120	83.3	
641- 1231	13	9.0	
1232 – 1822	3	2.1	
1823 – 2413	6	4.2	
2414 – 3002	2	1.4	
Labour size			
.00	46	31.9	
1.00	72	50.0	
2.00	22	15.3	
3.00	4	2.8	
Farm employment approach			
Daily paid	65	45.1	
permanent staffing	29	20.1	
Both	3	2.1	
No hire	47	32.6	
Broiler bird farmers			
No	52	36.8	
Yes	91	63.2	
Layer bird farmers			
No	80	55.6	
Yes	64	44.4	
Users of self-compounded feed			
No	132	91.7	
Yes	12	8.3	
Users of commercial feed			
No	14	9.7	
Yes	130	90.3	

Source: Field Survey, 2021

Analysis of Monthly Prices and Quantity of Demand of Poultry Feed Brand

In Ikono LGA between 2019 and 2021 as presented in Figure 1 is a graphical representation of the demand trend of the top three most preferred feed. The Figure 1 was plotted with data obtained from Table 2.

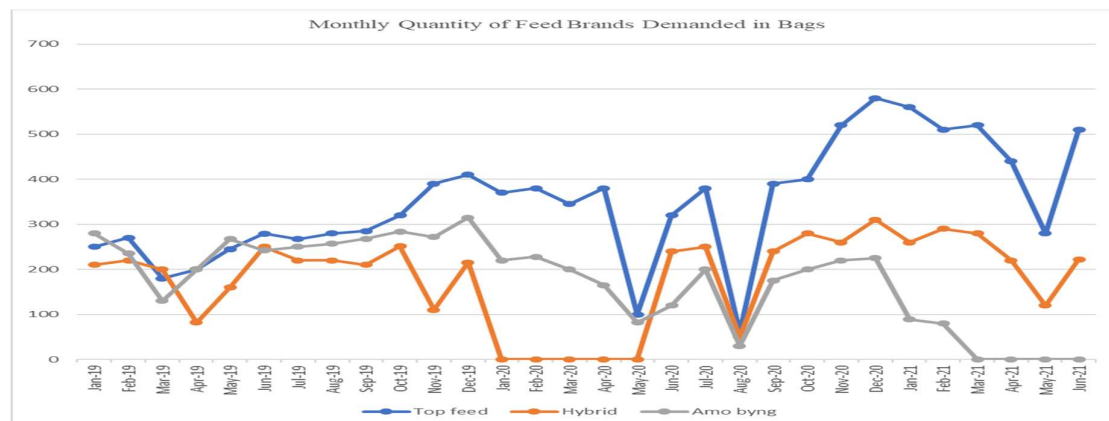


Figure 1: Variation of monthly quantity of feed brands demanded between 2019 and 2021.

Table 2: Demand for feed Brand in Ikono LGA of Akwa Ibom

Months/year	Top feed	Hybrid	Amo byng	Top feed price	Hybrid price	Amobyng price
Jan 2019	250	210	280	3500	3000	3200
Feb 2019	270	220	235	3500	3000	3200
Mar 2019	180	200	130	3500	3000	3200
Apr 2019	200	82	200	3500	3000	3200
May 2019	245	160	267	3500	3000	3200
Jun 2019	279	250	242	3500	3000	3200
July 2019	267	220	250	3500	3000	3200
Aug 2019	280	220	257	3500	3000	3200
Sept 2019	285	210	268	3500	3000	3200
Oct 2019	320	251	284	4000	3200	3500
Nov 2019	390	110	272	4000	3200	3500
Dec 2019	410	215	315	4000	3500	3800
Jan 2020	370	0	220	4000	0	3800
Feb 2020	380	0	228	4000	0	3800
Mar 2020	345	0	200	4000	0	3800
Apr 2020	380	0	165	4500	0	4200
May 2020	100	0	82	4500	0	4200
Jun 2020	320	240	120	4500	4300	4200
July 2020	380	250	200	4500	4300	4200
Aug 2020	60	50	30	4500	4300	4200
Sept 2020	390	240	175	4500	4300	4200
Oct 2020	400	280	200	4500	4300	4200
Nov 2020	520	260	220	5200	5000	4500
Dec 2020	580	310	225	5200	5000	4500
Jan 2021	560	260	89	5500	5000	5000
Feb 2021	510	290	80	5500	5500	5000
Mar 2021	520	280	0	5700	5700	0
Apr 2021	440	220	0	5700	5700	0
May 2021	280	120	0	5700	5700	0
Jun 2021	510	222	0	5700	5700	0

Source: Field Survey, 2021

As displayed in Table 2, top feed indicated by the blue line is the most demanded feed brand out of the three having its highest demands in December 2020 as shown in the critical point of the graph with almost 600 bags being demanded. It is closely followed by Hybrid Feed and Amo byng with their highest demands of over 300 bags in December 2019 and December 2020, respectively. Hybrid Feed had its least demand between January and May of 2020 while Amo Byng has its least demand from May 2021 till date. As seen from the graph which is in agreement with Table 2 where top feed has been the most demanded feed from Jan 2019 till date.

Analysis of the Supply Pattern of the Poultry Feeds Brand in Ikono LGA

Figure 2 is a graphical representation of the corresponding supply trend of the three most demanded feed types in Ikono LGA 2019 and 2021. The graph is plotted with the data supplied from Table 3.

Table 3: Supply for Feed Brand in Ikono LGA of Akwa Ibom State

Months/year	Top feed	Hybrid	Amo byng
Jan 2019	300	280	300
Feb 2019	300	280	300
Mar 2019	300	280	300
Apr 2019	0	0	0
May 2019	300	280	300
Jun 2019	300	280	300
July 2019	300	280	300
Aug 2019	300	280	300
Sept 2019	300	280	300
Oct 2019	300	280	300
Nov 2019	400	280	300
Dec 2019	400	280	300
Jan 2020	400	0	300
Feb 2020	400	0	300
Mar 2020	400	0	300
Apr 2020	400	0	300
May 2020	0	0	0
Jun 2020	400	300	300
July 2020	400	300	300
Aug 2020	0	0	0
Sept 2020	400	300	300
Oct 2020	400	300	300
Nov 2020	620	300	300
Dec 2020	620	300	300
Jan 2021	620	300	150
Feb 2021	620	300	150
Mar 2021	620	300	0
Apr 2021	620	300	0
May 2021	0	0	0
Jun 2021	620	300	0

Source: Field Survey, 2021|

As shown in Figure 2, the increase in demand from Figure 1 was proportional to an increase in supply and will consequently result in an increase in the price of the feed. From October 2019, top feed has been taking the lead as the most supplied feed brand in Ikono LGA, having the highest supplies between October 2020 and May 2021 with 600 bags of feed being supplied monthly as seen by the critical points of the graph. Hybrid Feed and Amo Byng had been lagging behind with 300bags of feed being supplied monthly between April 2019 and December 2020. The supply for Hybrid feed was poor between January and May of 2020. Top Feed still remains the most demanded and supplied Feed to poultry farmers in Ikono Poultry farmers as can be seen from Table 3 and Figure 2 above. The relationship between demand, supply and price of feed as seen from both graphs supports the ideology according to Okoro (2010) which stated that more of a commodity will be supplied at a higher price than at a lower price. This means that the higher the price, the higher the quantity supplied.

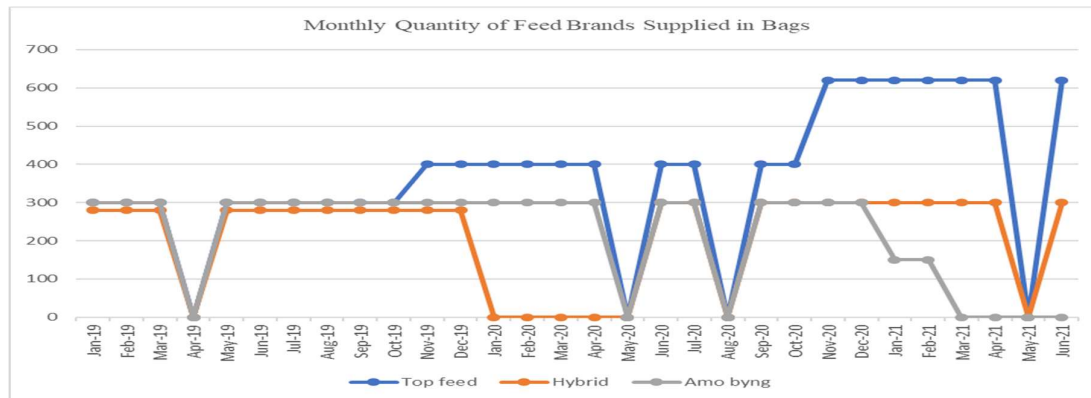


Figure 2: Variation of monthly quantity of feed brands supplied between 2019 and 2021

Feed Brand Preference among Poultry Farmers in Ikono LGA

Table 4 presents the results of the most preferred brand in Ikono LGA. The results obviously indicates that Top feed is the most preferred feed type in Ikono Local Government Area with a frequency of 100 farmers out of the 144 representing 69.4% of the farmers choosing it as their most preferred feed type.

Table 4: Distribution of Farmers according to Feed Brand Preference

Most preferred Feed Brand	Frequency	Percentage
Top feed	100	69.4
Chickum feed	1	.7
Amo Byng feed	11	7.6
Hybrid feed	28	19.4
Animal Care feed	1	.7
vital feeds	1	.7
Livestock feeds	2	1.4
Total	144	100.0

Source: Field Survey, 2021

The result of Table 4 goes on to validate the statement of the Chairman-Ikono Poultry Association in person of Elder Etim Idiong who in an oral interview on July 8th, 2021 stated that Top Feed is the most preferred feed type in Ikono, followed by Hybrid Feed and Amo Byng, respectively. As can be seen from the table, this is no doubt true as Hybrid Feed has 19.4% and 7.6% preference, respectively. Vital Feed, Chickun Feed and Animal Care Feed are the least preferred feed types in Ikono with 0.7% preference each.

Extent of Utilization of the Brands in the last one-year farming

From Table 5, the extent of utilization of different Feed brands by poultry farmers in Ikono indicates that 86 farmers representing 60.4% use Top Feed always. Top Feed therefore becomes the most preferred feed brand over a year period and this is in line with the Preference theory as earlier stated by Paul Samuelson in 1938 which states that consumer preferences can be revealed by what they purchase under different circumstances, particularly under different income and price circumstances (Zin *et al.*, 2021). Hybrid Feed follows as the second preferred feed brand by farmers in Ikono LGA with 31 farmers always using it representing 21.4% of the total feed brands always used. The table also indicates that Chickun feed is the least used feed brand in Ikono. Which ranks first as the “Not at All” used feed with 0.00 Brand utilization

index and 8th relative rank order positioning among other feed brands in the study area do not use Chickun feed.

Table 5: Distribution of Farmers according to Extent of Utilization of the Brands in the last one-year farming

Preferred feed brand	Not at all	Least use	more	Always	BUII and RROP
Top feed	6.3 (9)	3.5 9 (5)	29.9 (43)	60.4 (86)	0.903 1st
Chickun feed	94.4(136)	2.1 (3)	3.5 (5)	0.0(0)	0.035 4th
Amo Byng feed	86.8 (125)	4.9 (7)	5.6 (8)	2.8 (4)	0.084 3rd
Hybrid feed	47.2 (68)	3.5 (5)	27.8 (40)	21.5 (31)	0.493 2nd
Animal Care feed	95.8 (138)	3.5 (5)	0.0(0)	0.7(1)	0.007 7th
Breed well feed	95.8 (138)	4.2 (6)	0.0(0)	0.0(0)	0.000 8th
vital feeds	94.4 (136)	2.1(3)	2.8 (4)	0.7 (1)	0.035 4th
Livestock feeds	93.1(134)	4.2(6)	2.1(3)	0.7 (1)	0.028 6th

Note: BUII means Brand Utilization Incidence Index and RROP means Relative Rank Order Positioning

Source: Field Survey, 2021

CONCLUSION AND RECOMMENDATIONS

The study concluded that the poultry farmers in the study area (Ikono) prefer to use Top Feed in their farms representing 69% of total feeds used. This was followed by Hybrid feed with 19.4% of total feeds used in the area. The recommendations arising from the study are:

1. Poultry farmers should choose feed brands that would produce faster growth in view of the short cycle of the enterprise.
2. Poultry famers should go for feed brands that are readily available in shops and not scarce as switching poultry feeds may affect the health and productivity of birds.
3. Aside prevalent brands, other feed manufacturers should make their products readily available in shops so as to increase their sales in a rather competitive market.
4. There is need for efficiency in credit delivery services, as most of the credit facilities like bank loans do not reach farmers in the rural areas.
5. Farmers should be encouraged to improve their level of education by registering in continuing education centers in the Area.
6. Farmers should also be encouraged to organize themselves into Feed-mill cooperative societies to enable 5-10 poultry farmers to jointly establish a feed mill. This would help to reduce costs as well as enable farmers to finance the projects.

REFERENCES

- Abdullah, R. B., Soh, H. H. and Wan-Embong W.K. (2011) *Biotechnology in animal production in developing countries*. Proceedings of the 2nd International Conference on Agricultural and Animal Science, November 25-27, Singapore. Pp. 88-91.
- Akpantaku, S. O., Oluwalana, O. A. and Adepegda, O. A. (2006). Poultry farmers' preference and use of commercial and self-compounded feeds in Oyo area of Ouyoo State, Nigeria. *Agriculture and Human values*, 23: 245-252.
- Chavez, T. (2014). *Analysis of market structures, ECO 204 Microeconomics*, Ashford University Carlifonia, U. S. A. Pp. 31 -43
- Etuk, E. B., Etuk, I. F. and Nwadavid, P. E. (2018). *Carcass Characteristics of Broiler Chickens Raised in dual and Triple Phase Feeding Regimes*. Proc. 43rd Annual conference of the Nigerian Society for Animal production March 18th – 22nd 2018 FUTO Owerri Pp 1159-1161.



- Gajana, C. S., Nkukwana, T. T., Chimonyo, M. and Muchenje, V. (2011). Effect of altering the starter and finisher dietary phase on growth performance of broilers. *African Journal of Biotechnology*, 10(64): 14203-14208.
- Imoudu, P. B. and Afolabi, J. A. (2002). An Assessment of the performance of plantain market in Ondo State, Inter Academic Council (IAC) (2004). Realizing the promise and potential of African Agriculture. Pp. 2690-2697.
- Krejice, R. V. and Morgan, D. W. (1970). *Determining sample size for Research Activities Educational and Psychological Measurement*. Pp.2.
- Munyori, J. W., Ofunya, F. A. and Hhinj, G. K. (2014). Factors affecting the size of animal feed manufacturing firms in Nyeri and Kiambu Counties. *European Journal of Business and Social Science*, 3(3): 249-264.
- Mutua, S. and Kahi, A. (2010). Relationship of ration formulation objectives among feed millers dairy farmers, and feed policy regulators in Nakuru district- Kenya. *Journal of Livestock Research for Rural Development*, 22(12): 1-14.
- Njoroge, S. C., Bett, E. K. and Njehia, B. K. (2015). Impact of poultry feed price and price variability on commercial poultry production in Murang'a county, Kenya. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 6(1): 46-53.
- Okoro, E. U. (2010). *Managerial Economics. An Interdisciplinary Approach*, Enugu. Two-way printers and Publishers. Pp. 101-231.
- Okpanachi, U., Egbu, C. F., Okonkwo, U. N. and Madaki, R. O. (2018). *Comparative Evaluation of Broilers Raised in four different commercial feeds Available in Anyigba, Kogi State*. Proceedings of 43rd Annual in conference of the Nigeria Society for Animal production, March 18th – 22nd 2018. Futo Owerri. Pp. 442-444.
- Othman, M. K., Lawal, A. O., Iyiola, T. and Aderemi, A. (2018). *N-Power. Agricultural Extension Master Trainers MANUAL* Compiled and Edited by NAERLS in Collaboration with SG- 2000. 86 Pp.
- Shaib-Rahim, H. O., Eniola, O., Adeniji, S. A., Aderemi, F. T., Roberts, A. E., Oyedeji, M. B. and Elesho, R. O. (2020). Poultry farmer's preference for commercial and self-compounded feeds. *Direct Research Journal of Agriculture Food Science*, 8(6), 217-221.
- Ukpong, D., Akpan, M. and Akang, N. (2001). *Ikono-the Cradle of Ibibio Nation*. Dorand Publishers, Uyo. Pp.41.