KONTAGORA JOURNAL OF INTELLECTUAL DISCOURSE
(KJID)
January 2025
Vol.3 No.1, 2025.
ONLINE ISSN: 2756-5599

RETURNS ON INVESTMENT OF BROILER VALUE CHAIN ACTORS OF THE POULTRY INDUSTRY IN NIGER STATE, NIGERIA

ZARMA ADAMU[1], *KELECHI MGBONU[1] AND SIMEON OKPOITARI[2]

(*kiok2005@yahoo.com)

[1]Department of Agricultural Education, Federal College of Education, Kontagora, Niger State, Nigeria
[2]Department of Agricultural Education, Isaac Jasper Boro College of Education Sagbama, Bayelsa State, Nigeria

DOI: https://doi.org/10.5281/zenodo.15747860

Abstract

This study examined the returns on investment of broiler value chain in Niger State, Nigeria. Adopting combined (multistage, purposive and random) sampling techniques, data were collected using well-structured questionnaire. Responses collected were analyzed using functional analysis, descriptive statistics, econometrics, and farm budgeting techniques. Findings revealed that the functions of the value chain actors were categorized into input supply, farmer, processor, and trader. The returns on investment of the value chain actors were 58.45, 124.21 and 16.99 % for the farmers, processors and traders respectively. The broiler farmers were constrained by the lack of capital, seasonality, disease outbreak amongst others. The broiler processors were constrained by lack of capital, energy supply amongst others. Season of the year, lack of capital among others were identified by the broiler traders. It was recommended that government should adopt a bottom-to-top approach in policy formulation and providing credit facility to help the value chain actors partake in economic activities in Niger State, Nigeria.

Keywords: Broiler, Returns on Investment, Value Addition, Value Chain Actors

ONLINE ISSN: 2756-5599

Introduction

The Poultry industry is an integral part of the agricultural sector, and it contributes approximately 25 % of the agricultural contribution to GDP (Netherlands Enterprise Agency, 2020). The size of the poultry industry is approximately 180 million birds in three production systems. The extensive or free-range system accounts for 46 % of the standing population; semi-intensive and the intensive systems contribute 33 and 21 % respectively (FAO, 2019). Poultry actually refers to birds that are primarily raised for consumption either for meat, egg or feathers. Thepredominantly reared poultry in Nigeria are chickens, ducks, guinea fowls, turkeys, quails, ostriches and pigeons. According to Adene and Oguntade (2006), chicken, guinea fowls, turkeys are among the predominant commercial poultry in Nigeria.

Poultry plays a vital role towards food security and human nutrition by providing meat and eggs for the teeming population. Chicken meat production is estimated at 300, 000 tonnes and egg production is placed at 650,000 tonnes per year (FAO, 2019). Sahel (2015) opined that Nigeria has the largest market for poultry and its products in Africa, and that the industry contributes about eighty billion Naira ($600 million) to the economy. The huge market for poultry products in Nigeria is attributed to the increased demand for poultry meat and eggs, especially amongst urban consumers (Bartlett *et al.*, 2010).

The steady increase in urban population and the middle class with corresponding increase in disposable income and government drive to modernize retailing of the poultry industry in Nigeria has led to changes in the consumption patterns and demand for different poultry products that are processed and easy-to-cook (Netherlands Enterprise Agency, 2020; Onyeneke *et al.*, 2020). Since animal protein is the most

reliable source of protein for effective function of human body (Brown, 2017), poultry products is considered as the quickest means to meet the protein needs (Munonye & Chidiebere-Mark, 2017). Poultry meat is an important provider of the essential polyunsaturated fatty acids (PUFAs), especially the omega (n)-3 fatty acids (Farrell, 2013; Al-Khalaifah & Al-Nasser, 2019).

The annual per capita consumption of poultry meat and egg in Nigeria is 1.8 and3.5 kg respectively (FAO, 2019). This is low compared with averages in more developed countries, with an average per capita consumption of 49.3 kg for the USA, 3.2 kg for South Africa and 7.67 kg for Ghana (Netherlands Enterprise Agency, 2020). Despite the low per capita consumption, there still exists a supply deficit for poultry products in Nigeria. With economic growth and an expanding rural and urban population, the demand for poultry products will ever be increasing.

Nigeria's poultry sector is currently driven by a rapidly modernizing value chain. The value chain involves different range of activities at different stages, which are required to bring a product or service from conception until delivery to the final consumers (Kaplinsky & Morris, 2001). The different activities are being championed by different actors and these are the input suppliers, producers, processors, and wholesale and retailers (Campbell, 2006). These actors transform the product by adding value at each stage. Value addition on products is being carried out as a result of some reasons like higher profit maximization, stabilized market conditions, diversification of products, job creation for the teemingpopulation and down-stream economic benefits (Naji, 2011).

The poultry value chain links actors and activities involved in delivering poultry products to the final

ONLINE ISSN: 2756-5599

consumer, with the product increasing in value at every stage as value is added (FAO, 2019). The poultry value chain is consistingof different segments operating in different markets. These includes fresh eggs, livechickens, frozen poultry meat, and related input products and services needed to produce eggs and poultry meat (Gereffi *et al*., 2005). The marketers supply both freshand frozen chicken products and eggs to consumers through traditional markets or through Modern Food Retail Markets (MFRMs), such as food stores, hotels, fast-foodeateries, and retail outlets (Onyeneke *et al.,* 2020). The supplies may either be retailedor in wholesales depending on the volume of demand. Hence, it is essential to have detailed understanding of the analysis of the poultry value chain which includes the production system, marketing channels and the relationship of the different actors that participate in the chain, the factors that constrain their growth and the competitiveness of the small-scale producers in the poultry sector (Sklan *et al*., 2003).

Production in the poultry sector is classified into three sectors as follows: the industrial sector, commercial sector and traditional sector which include highly integrated industries with automation, small to large scale commercialized poultry farms, and free-range birds respectively (Abimiku & Emeka-Okolie, 2008). Though, the traditional sector using extensive production systems constitute 46 % of Nigeria'spoultry population, the intensive and semi-intensive systems make up 21 and 33 %respectively of the poultry population, and they are basically commercial oriented (Heinke *et al*., 2015). This work is focused on value chain actors that are commercially oriented, using the semi-intensive production systems. Thus, the objectives of this research are to determine the cost and returns associated with each stage of the broiler valuechain in Niger State; determine the factors affecting profits earned by broiler value chain actors in Niger State; and identify factors that constrain different actors in the broiler value chain in NigerState.

ONLINE ISSN: 2756-5599

Research Methodology

The study was carried out in Niger State. It is located in the rainforest agro-ecological zone of Nigeria (Niger State Agriculture Development Programme, 2013). The State is located between latitudes 8.00^0N and 11.02^0 N and longitudes 3.02^0 E and 7.03^0 E (Niger State Bureau of Statistics, 2012; Ikusemoran *et al.*, 2014).The 2006 National Population and Housing Census put the total population of the state as 3, 954,772 (National Population Commission, 2006). Ikusemoran *et al.* (2014) reported that Niger State has the Niger valley terrain covering 19,044.93 km^2 (24.94 %), the plains covering 25,573.97 km^2 (33.49 %), upland covering 21,801.64 (28.55 %) while the remaining 9942.46 km^2 (13.02 %) are made up of highlands.

The state experiences two distinct seasons, the dry and wet seasons with annual rainfall varying between 1,200 mm in the north to 1,600 mm in the south (Ayinde *et al*., 2013). The rainy season lasts 150 to 210 days or more from the north to the south and mean maximum temperature is always high throughout the year. However, the lowest minimum temperatures occur usually between December and January when most parts of the state come under the influence of the tropical continental air mass which blows from the north. The Southern Guinea Savannah vegetation covers the entire landscape of the state. Like in other states of similar vegetation, it is characterized by woodlands and tall grasses interspersed with tall dense species (Ayinde *et al*., 2013). The State has three agricultural zones namely, Kontagora, Minna and Bida agricultural zones. The major occupations of households of the area are farming, trading, civil service and teaching. Some of the inhabitants of Niger state are subsistence and commercial poultry producers.

ONLINE ISSN: 2756-5599

Sampling Technique

A multi-stage sampling procedure was used in the selection of respondents for the study. The respondents comprised value chain actors at the production, processing and marketing stage. At the production stage, broiler producers were sampled. The population of the study included broiler producers who were commercially oriented using semi-intensive production systems for broiler birds. Purposive and random sampling techniques were employed in selecting the producers. In the first stage, four Local Government Areas (LGAs) were purposively selected based on the dominance of poultry production in the LGA's (Chanchaga and Bosso) were purposively selected from Minna Agricultural Zone, Kontagora was selected in Kontagora Agricultural Zone, and Bida Local Government was selected in Bida Agricultural Zone.

In each of the chosen Local Government Areas, four communities were purposively selected for the same reason to give a total of 16communities.List of poultry producers' in the communities was obtained from the Agricultural Development Programme (ADP) office in the LGA and the Poultry Producers Association (PFAN), and the names in the lists made up the sample frame. The producers were chosen using a proportionate sampling technique from the sixteen communities, yielding a sample size of 112 poultry producers. The total number of questionnaires distributed for the study was 112, but only 100 questionnaires were returned from the survey. The proportionate sampling is a type of sampling design where the stratification is proportionate. Each stratum's sample size is proportional to the stratum's population size. It is a sampling technique employed when a population is divided into several categories of varying size. Each stratum of the sample has the same sample fraction. The jth sample size in

ONLINE ISSN: 2756-5599

proportionate sampling is given as;

$$n_j = \frac{K}{N} \times n \qquad \ldots \text{Eqn } 3.1$$

Where,

n_j =size of the jth stratum;

K= the population size in the stratum

N=the entire population;

n =sample size

In the second stage, one major market was identified from each of the four selected Local Government Areas. The list of broiler processors and marketers (Live chicken and eggs) were drawn from the Markets' Marketers Association. This list was merged to form the sampling frame of broiler marketers. Twenty-nine broiler processors and fifty-one were randomly selected from the markets to give 29 broiler processors and 51 broiler marketers for the study. Thus, the sample comprised, 100 broiler producers, 29 broiler processors and 51 broiler marketers from the four selected Local Government Areas.

Data Collection

Primary data were collected through the use of structured questionnaire and was supplemented with oral interview in places where the respondents could neither read nor write. The questionnaire contained both open and close ended questions. Similarly, the questionnaire was properly subjected to content validity with the help of the research supervisor before administering it to the respondents. The questionnaire elicited responses on the socio-economic characteristics of the respondents, the production systems adopted, the profit earned, amongst others.

ONLINE ISSN: 2756-5599

In addition, secondary data were gathered through interviews with key informant focused group discussions, and personal thoughts of value chain actors in the state,their functions, and the highest production of broiler and other products by Local Government Areas in Niger state.

Data Analysis

Functional analysis, descriptive statistics, econometrics, and farm budgeting techniques were used to analyze the data. Statistics such as frequencies, percentages, mean, cost and returns analysis were employed.

Results and Discussion

Functional Analysis of the Value-chain Actors in Broiler Production in NigerState, Nigeria

The broiler value chain actors, the stages of their production, their function, contact agents and outputs are represented in the Table 1 below and used for further discussion of the functional analysis of the actors in Niger State.

Input Supplier

According to Table 1, the input supplier is the first value chain actor. The input supplier plays an indispensable role in the value chain because they provide the inputs required for a productive and profitable venture for the producers. Theirkey function is provision of the inputs not limited to feeds, vaccines, medication, farm and brooding equipment, etc. In Niger State, input suppliers are veterinary dealers, feed distributors and day-old chicks' distributors. Insurance companies playsignificant roles in supplying the producers with the inputs to facilitate broiler production in the state, hence, they are

ONLINE ISSN: 2756-5599

classified as the agents of input supplies in the study area. In feed distribution, the common feeds being supplied by these agents are hybrid mesh and pelleted feeds, Top feeds, Zion feeds and these brands comprises of three broiler feed categories which are the super starter, the starter, andthe finisher.

The Veterinary dealers are categorized into two groups; the licensed veterinary personnel and independent marketers of agro-medicals for livestock production. Theday old chick distributors play vital role as input suppliers through provision of the brooding stocks for the producers as most prevalent brooding birds are not hatchedin Niger State. These prevalent brooding birds are OBA, SAYED, Agrited, CHI etc. Insurance services are not common among the producers in the state. However, most of the insurance premiums acquired by the producers are from Government owned insurance under the Agricultural programmes of the Central Bank of Nigeria.

Table 1 Value chain actors and their functions

Value Chain Actors	Stage of Value Chain	Function	Agents	Outputs
Input Suppliers	Input Supply	Production Input	Hatcheries, Input manufacturers, Veterinarydealers, feed distributors, Day old chick distributors, Insurance companies.	Day Old Chicks, Feeds, Medicines &Vaccines, Farm Implements
Producers	Production of Dayold till maturity, Trading of the broiler birds at farm gate	Raising of the broilers till maturity, Marketing of thebroilers	Poultry Producers	Live Broiler birds
Processors	Processing	Defeathering, Evisceration andPackaging	Producers, Marketers, Marketprocessors	Broiler meat
Marketers	Marketing	Trade, Storage, Transportation	Wholesalers, Retailers, Transporters	Live Broiler Birds/Processed Broiler Meat ready for consumption

Source: Field Survey Data, 2022

Producers

The producers are the second category of value chain actors in the broiler production in Niger State. The activities of the producers revolve from raising the broiler chicks from day-old till maturity for table consumption. They also, participate actively in the marketing of the birds at the time of harvest either by processing or selling as live birds. The broiler producers are poor in English, small holder producers but actively producegreater percentage of the gross broiler consumed within the state.

ONLINE ISSN: 2756-5599

The Processors

The processors are in the processing unit of the chain. They are key players in the value addition when it comes to broiler production in the study area. They actively source for the live birds from the Producers, de-feather, eviscerate, package and sell for final consumption either to retailers or wholesalers. The technicality in this roleof value chain entails the packaging skills, the dressing skills, and efficient use of machineries like the de-feathering machine, killing cone, and cold room for value addition of the raised broilers.

The Marketers

Marketers are the engine room to value chain. They participate actively in the chain ofvalue addition through convening and meeting the consumer's need. They decide what the processors should process, what the producers should raise and what is available for the consumer to purchase. The marketers could be the producer who raised the birds, or the processor who processed the bird for final consumption for the consumer. The marketer is either a wholesaler or a retailer depending on the size of thebusiness. Further still, the key function of this value chain actor is in the marketing of the birds. The marketer bears final risk until the birds get to the final consumer. Theyare actively involved in storage, transportation and most times packaging of the birds. They always take into consideration the 4P's of marketing mix (place, promotion, price, and product) in other to meet the consumer's need and demand inthe study area.

Cost and returns of producers in the broiler value chain

The cost and returns of producing 1000 broilers from starter to finished stage for consumption is

ONLINE ISSN: 2756-5599

represented in Table 2. The results show that, on average, the producers spent ₦2,243,500 to raise 1000 broilers within their production timeline of 8 weeks. The average cost of raising one unit of broiler bird was estimated as ₦2,243.50. The net margin of the investment was ₦1,311,500 without tax, and Returns on Investment of 58 %. This implies that the producers earn 58 kobo when they invest ₦1 into the enterprise for production. The net return of broiler farming per production cycle is higher than the prevailing minimum wage of ₦30,000 per monthand ₦360,000 per annum. This shows that broiler production is a profitable venture in the area of study going by the percentage of returns on investment. This is also in line with the findings of Ohajianya *et al*. (2013) that poultry production is a profitable venture.

The findings from the Table 2 revealed that ₦2,003,500 was estimated as the average of the total variable cost of producing 1,000 broilers, while ₦240,000 was estimated by the respondents as the total cost of fixed assets used in producing the 1,000 broilers. This implies that 89.30 % of the total cost of production was variablecost, while about 10.30 % was for fixed cost based on the depreciation value. This isin accordance with findings of Panwal & Shaibu (2020) on the economic analysisof broiler production. The wide margin between the variable cost and fixed costs in broiler production implies the low investment in fixed asset in agricultural practice in Nigeria.

The findings of total variable cost revealed that about 60.06 % of the total variable cost was allotted to the feeds. This implies that the feed cost is largest cost components in broiler production. Broilers are special breeds of domesticated birds,whose weight and size is most determined by the volume of feed consumed. The more feed they consume, the more likely their weight gain. Also, the high cost of feeds can be attributed to the high cost of grains and concentrates used in formulationthe broiler's

feeds.

Cost and Returns of Processors in the Broiler Value chain

The cost and returns of processing 1000 broilers for consumption is presented inTable 3. About 91.36 % of the total cost incurred during the processing of 1,000 broilers was variable cost and 73.61 % of the variable was the labour cost in form of wage. This could be as a result of many activities involved in processing of the broiler birdsand the risk-bound attached to it. These activities are de-feathering and dressing of the broilers; which involves exposure to over 80^0C of heat needed to scald the feathers of the broilers, also exposure to sharp objects for butchering of the broilersand the inhaling of the gases as a result of wood burning used in heating.

Table 2 Cost and returns of 1000 broiler birds produced in Niger State

Item	Unit	Quantity	Unit price	Amount (N)
Revenue				
Birds		980*	3, 500	3,430,000
Droppings	50 kg	500	250	125,000
Total Revenue				**3,555,000**
Fixed Cost				
Kerosene stove(Depreciated value)		10	1500	15,000
Adult feeders		100	900	90,000
Chick drinkers		50	300	15,000
Adult drinkers		100	1000	100,000
Housing				20,000
Total FixedCost				**240,000**
Variable Cost				
Day Old Chick		1000	520	520,000

ONLINE ISSN: 2756-5599

Feed				
Broiler starter	50 kg	6, 500	67	435,500
Broiler finisher	50 kg	6,000	128	768,000
Fumigation				40,000
Labour		3	15,000	45,000
Kerosene	Litres	600	200	120,000
Transportation				10,000
Wood shavings				50,000
Medication				15,000
TVC				**2,003,500**
Total Cost				**2,243,500**
Gross Margin				**1,551,500**
Net Farm Income				**1,311,500**
ROI				**0.58 (58 %)**

*Adjustment for 2 % mortality; Depreciation was carried out using straight line method

ONLINE ISSN: 2756-5599

Table 3 Cost and returns of 1000 broiler birds processed in Niger State

Item	Unit	Unit price	Quantity	Amount (N)
Revenue				
Processing of bird (De-feathering andcutting)		200	1000	**200, 000**
Fixed Cost				
Dep. Bowl			700	700
Dep. Cooking pot			500	1000
Dep. Coal stand			1000	500
Knife			500	500
Rent	Naira			5,000
Total Fixed Cost				**7,700**
Variable Cost				
Water	25 Litres	100	75	7500
Energy (Charcoal, Firewood)	Bundle	700	10	7000
Labour	Naira	20,000	3	60,000
Cellophane bags	Pack	700	10	7000
Total Variable Cost				**81,500**
Total Cost				**89200**
Gross Margin				**178,500**
Net Farm Income				**110, 800**
Returns on Investment				**1.24(124%)**

The gross margin, net margin and the return on investment were revealed as ₦178,500, ₦110,800 and 124 % respectively. This implies that for every ₦1 the processor invests in the enterprise yields ₦1.24kobo. The net-margin that the processor makes in processing 1,000 broiler birds is almost four times the current minimum wage in Nigeria, hence, it is a highly profitable

ONLINE ISSN: 2756-5599

business venture in the area of study.

Cost and Returns of producers in the broiler value chain

The cost and returns of marketing broiler birds to consumers as trader is representedin Table 4. The findings in Table 4 revealed the cost and returns of marketers of broiler birdsin Niger State. The total revenue generated from the sales of 1000 broiler birds in thestudy area during the time of the survey was revealed as **N**4,502,000 with Net Farm income of ₦654,000 and Return on Investment as 17 %. The net farm income is almost twice higher than the annual minimum wage in Nigeria. This implies that thebusiness of broiler marketing in the study is profitable, as the net farm income is higherthan the prevailing minimum wage in Nigeria. The Return of Investment recorded at 17 % revealed that the marketers make ₦17 for every ₦1 invested into the business. This indicates that the business is profitable.

About 5.17 % of the total cost was fixed cost which covers the facilities and the fixed wages being paid for labour. And the 94.83 % were the components of the variable cost incurred in trading 1000 broiler birds in the study area. This implies that the marketers do not invest in the assets acquisition for the growth of the business.Apart from the cost of the broiler birds that cover 90.95 % of the total cost of the trading, the cost of labour and the feeding were about 3.11 and 1.68 % respectivelycovers

the most component of the cost structure. The cost of labour can be minimizedif family labour is employed by the marketers, which is dependent on their age and theirhousehold size in the study area.

Return on Investment of the Value chain actors in Broiler production

Table 5 below revealed the return on investments of the key value chain actors in broiler production in Niger state. According to the results in Table 5, the processors are the value chain actors with highest returns on their investment with 124 %, implying a return of ₦1.24 on every naira invested. The producers had 58 % returns on investment which is almost 50 % lower than the returns on investment of the processors. However, the volume of processing may exceed the number of birds produced in 8 weeks. It is advisable thatthe producers continue up to the processing stage so as to maximize profit. The marketers had an ROI of 17 % which implies a gain of 17 kobo on every ₦1 invested. The broiler value chain actors should be able to take advantage of the profits at all stages of the value chain by engaging in horizontal integration.

Table 4 Cost and returns of Marketers of 1000 broiler birds in Niger State

Item	Unit	Unit price	Quantity	Amount (₦)
Revenue				
Sale of whole Chicken		4500	1000	**4,500,000**
Sale of poultry dung	Bags	200	10	**2,000**
Total Revenue Cost				**4,502,000**
Variable Cost				
Cost Price of whole Chicken		3500	1000	3,500,000

ONLINE ISSN: 2756-5599

Feed	Kg	6500	10	65,000
Tax				24,000
Transportation				20,000
Fumigation				40,000
Total Variable Cost				**3,649,000**
Fixed cost				
Feeder		900	10	9,000
Drinkers		1000	10	10,000
Rent				60,000
Wages				120,000
Total Fixed Cost				**199,000**
Total Cost				**3,848,000**
Gross Margin				**853,000**
Net Farm Income				**654,000**
Return on Investment				**0.17(17%)**

Table 5 Return on investment of the broiler value chain actors in Niger State

Value chain Actors	Producers	Processors	Marketers
Return on Investment	58 %	124 %	17 %

Conclusion and Recommendations

The returns on investment of 56.5, 124.21 and 16.99 % recorded for the producers, processors

and marketers respectively suggest that poultry production and the associated downstream activities are highly profitable businesses. The research confirmed that value chain actors are very essential for the sustenance of the poultry industry in Niger state. Their activities would assure that the poultry industry grows profitably and thereby contributing to the economic development of the state in general.

Hence, it is of essence that:

i. The government should properly get involved or be in contact with all the actors in the area before making decisions that might influence the agricultural sector. The top-to-bottom policy formulation and implementation should not be encouraged and engaged. An approach where participation of the beneficiariesof such policies will enhance the targeted goals and objectives as the felt needsof the individuals would be met effectively.

ii. The value chain actors should encourage its members to get proper enlightenment and training on the basis and method of having a smooth and effective business. Hence, it is important for the value chain actors to join and participate in cooperative societies that will takeup the challenges that the government has failed to remedy.

iii. Provision of credit facilities at a single digit with minimal collateral will curb this constraint leading to sufficient productivity, profit maximization and food availability for the teeming population in Nigeria.

References

Abimiku, Y. J. and Emeka-Okolie, W. (2008). *Assessment of the Nigerian poultry market chain.* Food and Agriculture Organization of the United Nations, Rome, Italy.

Adene, D. F. and Oguntade, A. E. (2006). The structure and importance of the commercialand village-based poultry industry in Nigeria. FAO (Rome) Study, 102.

Al-Khalaifah, H. and Al-Nasser, A. (2019). Role of Poultry Research in Increasing Consumption of PUFA in Humans. In Gyula Mozsik and Maria Figler (Eds.) *Nutrition in Health and Disease - Our Challenges Now and Forthcoming Time*, 1-14. http://dx.doi.org/10.5772/intechopen.85099

Bartlett, J. E., Kotrlik, J. W. and Higgins, C. C. (2010). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology,Learning, and Performance Journal*, *19*(1), 43-50.

Brown, M. J. (2017). Animal vs. Plant Protein — *What's the Difference?* Healthline Media. https://www.healthline.com/nutrition/animal-vs-plant-protein.

Campbell, R. (2006). *Strengthening value chains to promote economic opportunities*. World Report Fall, 06, 4-5.

FAO (2019). *The future of livestock in Nigeria. Opportunities and challenges in theface of uncertainty.* Rome.

Gereffi, G., Humphrey, J. and Sturgeon, T. (2005). The governance of global value chains. *Review of International Political Economy*, *12*(1), 78–104.

Munonye, J. O. and Chidiebere-Mark, N. M**.** (2017). *Consumer's Perceptions of the Ban on Poultry Product Importation in South-East Nigeria: Implication for Food security.*First International Conference on Hidden Hunger and Food Security, Faculty of Agriculture, Federal University Ndufu-AIike, Ikwo, Ebonyi State, 8th-11th October, 2017.

Naji, M. (2011). *Enhancing small-scale fisheries value chains in the Mediterranean and Black Sea*. Draft Report. Thematic Session Iv – Part 1, General Fisheries Commission for the Mediterranean, Pp 47.

National Bureau of Statistics (NBS, 2021). Labour force statistics: employment by sector report-Q3; 2018. Availble from http:// nigerianstat.gov.

Netherlands Enterprise Agency (2020). Poultry sector study Nigeria. Netherlands Enterprise Agency, Hague.

Onyeneke, R. U., Emenekwe, C. C., Chidiebere-Mark, N. M., Munonye, J. O., Aligbe, J. O., Kanu, C. and Azuamairo, G. C. (2020). Impact of Poultry Producers' Participation in Modern Food Retail Markets on Household Dietary Diversity: Lessons from Southeast Nigeria. *Animals, 10* (611): 1 – 15.

Sahel (2015). An assessment of the Nigerian poultry sector. http://sahelcp.com/an-assessment-of-the-nigerian-poultry-sector/.SAHEL *11*: 1 – 3.

Sklan, D., Heifetz, S. and Halevy, O. (2003). Heavier chicks at hatch improves marketingbody

ONLINE ISSN: 2756-5599

weight by enhancing skeletal muscle growth. *Poultry Science, 82*: 1778–1786.