

Structure of Egg Marketing in Katsina Metropolis, Katsina State, Nigeria

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Received

December 12, 2018

Accepted

June 20, 2019

Published Online

September 29, 2019

Abstract: This study was conducted in Katsina Metropolis on the structure of egg marketing. The Primary data used were obtained using structured questionnaires administered to 50 egg marketers in the study area. Descriptive Statistics, Gross Margin Analysis and Gini Coefficient were used to analyze the data. The result showed that 84% of the marketers were between 20 – 50 years, 88% were males and 62% were married. Most of the marketers 74% had an average family size of 3 and 60% had primary education. Egg marketing in the study area is profitable with about ₦ 130,000 and ₦ 90,000 per month for wholesalers and retailers respectively. The return to investment is 0.15 and 0.2 on every naira for the marketers. A Gini Coefficient of 0.5687 showed that there is inequality in the distribution of income amongst the marketers, thus indicating pure oligopoly. Inadequate storage facilities and packaging materials were identified as the major problems being faced by the marketers in the study area.

Keywords: Structure, egg marketing, marketing margin, problems, Katsina, Metropolis.

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Cite this article as: Garba, N. 2019. **Structure of egg marketing in Katsina metropolis, Katsina State, Nigeria.** Journal of Environmental & Agricultural Sciences. 20:45-50.



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1. Introduction

Marketing is the sum total of all business activities involved in the movement of commodities from production to consumption (Adekanye, 1988; Yau and Tang, 2018). This definition is applicable to the marketing of industrial goods as well as to that of agricultural commodities. Agricultural marketing is concerned with all stages of operations which include the movement of commodities from the farms to the consumers (Byker et al., 2012; Chand, 2012). It involves the performance of all activities involved in the flow of goods and services from the point of initial production until they are in the hands of ultimate consumers (Adesiyun et al., 2007; Conner et al., 2010; Liu et al., 2013). Poultry is one of the world's major and fastest growing sources of meat and egg and representing over 22% of the meat Production. Poultry production is a very important enterprise of the livestock industry in Nigeria. Poultry production is generally a category of domesticated birds kept by humans for the purpose of collecting their eggs or raising them for meat or feathers (Bose et al., 2015; Mottet and Tempio, 2017).

Poultry has become one of the most effective sources of protein for human consumption. It is also a major source of eggs and meat which have high nutritional value, particularly as a source for the supply of animal protein (Baker, 2009; Olagunju and Babatunde, 2011; Petracci et al., 2013; Siegert and Rodehutschord, 2019). The need for animal protein in human diet has been recognized for long. In recent times, consumptions of most Nigerians have declined to an unbearable level. Malnutrition in human diet has been a major issue being debated on World Wide. Mostly in the developing countries, cases of poor health condition were traced to lack or inadequate animal protein in their diet. Feeding on food of animal origin is probably the fastest economic and nutritional route to improvement in the nutritional status. Foods from animal origin have the capability of providing 35 g per capita of animal protein per day (Ojo, 2003).

Poultry is one of the main sectors where over 60% of animal protein is being derived. However, the increased growth rate experienced in this industry does not commensurate with the fast rate of growing population. Egg as an important poultry product is

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known to be acceptable to all people of all races, and the most widely demanded poultry product (van Vliet et al., 2016). The production of eggs has been the factor of the greatest economic importance in poultry production thus the marketing of this product cannot be over emphasized (Mohammed et al., 2013). Most of the eggs marketed and consumed in Nigeria come from poultry birds. As a result of the fragile nature of eggs, its marketing has been influenced by the difficulties in handling, transportation and distribution to the consuming unit. This has also influenced the cost of eggs in the market to a point that an average of Nigerian people cannot afford to buy eggs, and as a result failed to meet their standard daily nutritional requirement for protein (Mohammed et al., 2013). This study examined the socioeconomic characteristics of poultry egg marketers, the profitability and the market structure of eggs in Katsina Metropolis.

2. Methodology

An open-ended structured questionnaire was used to generate the survey data from the respondents. Several research questions were asked by the researcher. The questions were:

- a. What are the socio-economic characteristics of the egg marketers?
- b. Is egg marketing profitable in the study area?
- c. What market structure exists between the marketers?
- d. What are the problems faced by marketers in the study area?

2.1. Study Area

The study was conducted in Katsina Metropolis, Katsina State of Nigeria. The area is located in the Northwestern part of Nigeria; it has a population of 318,132 people (NPC, 2016). The people of the area are mostly farmers. They are also involved in trade and government work. Crops grown mostly in the areas are Cotton, Millet, Groundnut, Sorghum, Maize, Potatoes and Cowpea. The species of livestock reared in the area include Cattle, Sheep, Goat and Poultry. Katsina is a city (formerly a city-state), and a local Govt.area in Northern Nigeria, and is the capital of Katsina State. Katsina is located some 160 miles east of the city of Sokoto, and 84 miles northwest of Kano, close to the border with Niger. The city is the center of an agricultural region producing Groundnuts; Cotton, Hides, Millet and Guinea corn. It also has mills for producing Peanut oil and steel. The city is largely Muslim and the population of the city is mainly from the Fulani and Hausa ethnic groups.

Katsina local Govt.area has an area of 142 km². It is surrounded by city walls 13 miles (21 km) in length. It has an average rainfall ranging from 600-700mm annually (Najamuddeen et al., 2012). Generally, climate varies considerably according to months and season. The two climates are: a cool dry season from December to February; a hot dry season from March to May; a warm wet season from June to September; a less marked season after rains during the months of October to November, characterized by decreasing rainfall and a gradual lowering of temperature. The minimum and maximum temperatures of Katsina metropolis are 21°C and 35°C respectively (Najamuddeen et al., 2012). Modern day Katsina has many information technology companies, providing internet access to the people of Katsina.

2.2. Sampling Techniques and Sample Size

A purposive sampling technique was used to select five areas (Katsina Central Market, Katsina Old Central Market, KofarMarusa, Kofar Kaura and SabonLayi) from the study area. This is due to the intensity of egg marketing activities in the areas. Ten Egg marketers (Wholesalers and Retailers) were randomly selected from each area making a total of fifty marketers.

2.3. Data Analysis

Descriptive Statistics such as frequencies and percentages were used to analyze the socioeconomic characteristics of the marketers. Gini Coefficient was used to examine the market concentration for egg marketers in the study area. Mathematically, it is represented by equation [1].

$$GC = 1 - \Sigma XY \quad [1]$$

Where:

G.C = Gini Coefficient

X = Percentage of Egg Sellers

Y = Cumulative percentage of their sales.

Gross Margin analysis was employed to determine the profitability of egg marketing in the study area.

Gross margin was calculated using equation [2],

$$GM = GI - TVC \quad [2]$$

Where G.M. is Gross Margin; G.I., Gross Sales/Income and TVC, Total Variable Cost.

3. Results and Discussion

Table 1 revealed that 40% of the poultry egg marketers fall within the age range of 20-30 years while 30% fall within the age range of 31-40 years. This showed that marketing of egg in the area is dominated by youth.

Table 1. Socio Economic Characteristics of the Poultry Egg Marketers

Variable	Frequency	Percentage
Age		
20 – 30	20	40.0
31 – 40	16	32.0
41 – 50	6	12.0
51 – 60	5	10.0
61 years and above	3	6.0
Total	50	100
Gender		
Male	44	88.0
Female	6	12.0
Total	50	100
Marital Status		
Married	31	62.0
Single	19	38.0
Total	50	100
Family Size		
1 – 5	14	45.1
6 – 10	9	29.0
11 – 15	3	9.7
16 and above	4	12.9
Total	31	100
Educational Background		
Primary Education only	2	4.0
Secondary School Education only	12	24.0
Tertiary Education only	16	32.0
Qur'anic Education only	6	12.0
Qur'anic and Western education	14	28.0
Total	50	100

Source: Field Survey, 2017.

Afolabi (2007) in his study of egg marketing in South-Western Nigeria reported that egg marketing in the area is dominated by people aged between 26-45 years (60.5%). This also tallied with the findings of Ayoyinka (2012) in his study, the economics and social characteristics of registered poultry egg producers in Ilorin, Kwara State. The results showed that majority of the farmers were relatively young and still in their active age. The implication is that younger farmers are likely to adopt new innovation faster than the older ones.

Around 88% of the poultry egg marketers were males, while only 12% of the egg marketers were females (Table 1), indicating limited role of females. This is probably due to the fact that men are the bread winners of most families. They therefore, have to get engaged in income generating activities to raise money in order to provide for their families. This coincided with the findings of Maikasawa and Jabo (2011) who revealed that 60% of the backyard poultry farmers in Sokoto metropolis were males and 40% were females. The result also tallied with the findings of Ayoyinka (2012) in his study, the

economics and social characteristics of registered poultry egg producers in Ilorin, Kwara State. The result shows that majority of the farmers are males. This high proportion of males to females may be due to the fact that religion and norm play crucial roles in the livelihoods of the people in the study area that males are to provide for the household.

It also showed that 62% of the egg marketers were married, while 38% of them were single. This is due to the fact that culture and religion emphasizes on early marriage in the study area. This tallied with the findings of Gani and Adeoti (2011) in their study analysis of market participation and rural poverty among farmers in northern part of Taraba State, Nigeria. The result showed that 75% of the respondents were married. The result also agreed with the findings of Najamuddeen et al. (2012), where they reported that 66% of beef marketers were married. This also tallied with the findings of Ayoyinka (2012) where he reported that majority 77% of the farmers were married. This shows that the respondents are responsible according to the societal standard and therefore are likely to have some experience of life.

Table 2. Gross Margin Analysis of Egg Marketing/Month/Crate of Eggs

Marketing Costs/Revenue Size	Value(₦)
Wholesalers	
a. Sales/Income from average size crate of egg	850.0
b. Cost of a Crate	700.0
c. Cost of transporting a crate	10.0
d. Cost of labor	10.0
e. Total Variable Cost	720.0
f. Gross Income	130.0
g. Average Quantity sold per month	1,000
h. Gross income per month	130,000
h. Return per naira invested	0.15
Retailers	
a. Sales/income from average size crate of egg	900.0
b. Cost of a crate	700.0
c. Cost of transporting a crate	10.0
d. Cost of labor	10.0
e. Total variable cost	720.0
f. Gross income	180.0
g. Average Quantity sold per month	500
h. Gross income per month	90,000
i. Return per naira invested	0.2

Source: Field Survey, 2017. 1USD= 362.35₦

The result revealed that 45% of the poultry egg marketers have an average family size of three (3), while 29% have an average family size of five (5). This implied that most of the poultry egg marketers in the study area have responsibilities of family on them. Arthur (2006) in his study family size and quality of life Nexus observed that small family size enjoy better economic and social lives which have great influence on better understanding of environmental conditions.

The Table also showed that 24% of the poultry egg marketers had acquired education up to secondary level, while 32% had acquired education up to tertiary level. Oladipo and Adekunle (2010) studied the empirical determination of socio-economic status and its relationship with selected characteristics of rural male farmers in Kwara State, Nigeria. The study revealed that individuals with

higher educational attainment are usually being faster adopters of innovation. This is in line with the findings of Haruna et al, (2006) that education is important amongst the poultry farmers because education enables them to adopt improved agricultural practices and innovation for improved productivity. This also tallied with the findings of Adesiyani et al. (2007) who reported that literacy improves the level of adoption of improved marketing techniques.

Table 2 showed the Average Costs, Returns and profitability on egg marketing. The total variable cost per crate of egg was ₦720.00 for wholesalers and retailers respectively. The Gross Income was ₦130.00 and ₦180.00 per crate for wholesalers and retailers respectively. The result showed that egg marketing is a profitable return for every naira invested in marketing of eggs.

Table 3: Distribution of Poultry egg marketers by monthly sales

Quantity sold (crate)	No. egg marketers	Percentage of egg marketers (X)	Cumulative percentage	Total value of monthly sales (₦)	% of total sales	Cumulative percentage (Y)	$\sum XY$
1 – 600	37	74.0	74.0	41,395,400	34.8	34.8	0.2575
601 – 1200	7	14.0	88.0	23,588,100	19.9	54.7	0.0766
1201 – 1800	3	6.0	94.0	17,799,000	15.0	69.7	0.0418
1801 – 2400	1	2.0	96.0	8,574,900	7.2	76.9	0.0154
2401 ≤	2	4.0	100	27,427,500	23.1	100	0.0400
Total	50	100		118,784,500	100		0.4313

Source: Field Survey; Gini Coefficient = $1 - \sum XY = 0.5687$.

Table 4: Distribution of poultry egg marketers based on the types of problems faced

Type of Problems faced	Frequency	Percentage
Inadequate transportation	24	48.0
Inadequate storage facilities	32	64.0
Inadequate packaging materials	28	56.0
Low Financial assistance from Government	32	64.0
Total	50*	232*

Source: Field Survey, 2017; *Multiple responses.

This tallied with the findings of [Adesiyun et al. \(2007\)](#) in their study the economic analysis of poultry marketing in Ido local Govt. area of Oyo State, Nigeria. The research showed a net return of ₦6, 540, indicating a profitable investment. This result also showed that egg marketers (wholesalers and retailers) earn ₦0.15 and ₦0.2 on each ₦1 invested. The result tallied with the findings of [Akinpelu and Adenegan \(2011\)](#) in their studies performance of SweetPotato marketing system in Umuahia market, Abia State, Nigeria. They reported that for every ₦1.00 spent on sweetpotato the traders realized ₦1.15 and ₦1.08 respectively.

Table 3 shows the computation of Gini Coefficient. The Gini Coefficient breakdown showed a concentration in the market with (0.5687) indicating the possibility of pure oligopoly and inequality in earnings among the poultryegg marketers. The closer the value is to unity, the greater is the degree of inequality and therefore, the higher is the level of concentration and vice versa ([Adekanye, 1988](#)). This is in consonance with [Akinpelu and Adenegan \(2011\)](#) who reported a Gini Coefficient of 0.7970 which implied inequality in the distribution of income among potato marketers (retailers). This also tallied with the findings of [Ekunwe and Alufohai \(2009\)](#) in their study Economics of poultry marketing in Benin City, Edo State, Nigeria. They reported that there is high level of inequality in the distribution of income among the respondents (0.8129) and high level of concentration. Result showed that egg marketing in the study area is conducted in an imperfect competitive manner.

Table 4 showed that 64% of the marketers were faced with the problem of inadequate storage facilities. This tallied with the findings of [Adesiyun et al. \(2007\)](#) that there were inadequate storage facilities for poultry products. The result also showed that 49% of the egg marketers attributed their problems to inadequate transportation means. This also coincided with the findings of [Mohammed et al. \(2013\)](#) in their study evaluation of poultry egg marketing in Kuje Area Council Municipality of F.C.T Abuja, Nigeria. The result showed that 80% of the egg marketers

encountered problems of transportation due to bad roads and poor condition of vehicle.

4. Conclusion

Based on the findings of this study, it could be concluded that majority of the marketers are young and able bodied people. Marketing of eggs is also profitable and efficient in the study area. The market is concentrated (high inefficiency in the market structure) and there is also an inequality (unequal opportunity in income generation) in the distribution of income among the marketers. However, majority of the egg marketers in the study area were faced with some problems which include transportation and storage problems.

Acknowledgments: The author acknowledge assistance of staff at College of Agriculture, Hassan Usman Katsina Polytechnic, Katsina, Nigeria.

References

- Adekanye, T.O. (Ed.) 1988. Readings in Agricultural Marketing. Longman Nigeria Limited.p.215.
- Adesiyun, O.I, O.A. Adeleke and B.A. Salako. 2007. Economic analysis of poultry marketing in Ido Local Government Area of Oyo State, Nigeria. Res. J. Poult. Sci. 1(3-4): 23-25.
- Afolabi, J.A. 2007. Evaluation of Poultry Egg Marketing in South-western Nigeria. Int. J. Poult. Sci. 6(5): 362-366.
- Akinpelu, A.O. and K.O. Adenegan. 2011. Performance of sweet potato marketing system in Umuahia Market, Abia State, Nigeria. Cont. J. Agric. Econ. 5(1): 7-13.
- Arthur, J. 2006. Family Size and Quality of Life Nexus: A Case of the Sunyani Municipality, Ghana. 5th African Population Conference, Arusha, Tanzania Citeseer. 10 -14.
- Ayoyinka, J.N. 2012. Economics and social characteristics of registered poultry egg producers in Ilorin, Kwara State. Russian J. Agric. Socio-econ Sci. 11 (11): 18 -23.
- Baker, D.H. 2009. Advances in protein–amino acid nutrition of poultry. Amino Acids. 37(1): 29-41.

- Bose, A.A., I.Y. Abba, M.J.Madaki and O.L. Obute. 2015. Analysis of Poultry (Layers) Enterprises in Igabi Local Government Area, Kaduna State, Nigeria. *J.Agric.Vet. Sci.*8(4): 43-49.
- Byker, C., J. Shanks, S. Misyak and E. Serrano. 2012. Characterizing farmers' market shoppers: A literature review. *J. Hunger Environ. Nutrit.* 7(1): 38-52.
- Chand, R. 2012. Development policies and agricultural markets. *Econ. Polit. Weekly.* 47(52): 53-63.
- Conner, D., K. Colasanti, R.B. Ross and S.B. Smalley. 2010. Locally Grown foods and farmers markets: Consumer attitudes and behaviors. *Sustainability.* 2(3): 742-756.
- Ekunwe, P.A and G.O.Alufohai 2009. Economics of Poultry Egg Marketing in Benin City,Edo State, Nigeria. *Int. J. Poult. Sci.* 8(2): 166-169.
- Gani, B.S. and A.I. Adeoti. 2011. Analysis of market participation and rural poverty among farmers in northern part of Taraba State, Nigeria. *J. Econ.* 2(1): 23 -36.
- Haruna,U., N.Murtala and H.S. Ahmed 2006. Economics of groundnut processing among the rural women in Katagum local government area, Bauchi State, Nigeria. *Savannah J. Agric.*1: 138-144.
- Liu, R., Z. Pieniak and W. Verbeke. 2013. Consumers' attitudes and behaviour towards safe food in China: A review. *Food Control.* 33(1): 93-104.
- Maikasuwa, M.A. and M.S.M. Jabo. 2011. Profitability of Backyard Poultry Farming in Sokoto Metropolis, Sokoto State, North-West, Nigeria. *Nigerian J. Basic Appl. Sci.*19(1): 111-115.
- Mohammed, A.B., S.A. Mohammed, A.F. Ayanlere and O.K. Afolabi 2013. Evaluation of poultry egg marketing in Kuje Area council municipality of F.C.T Abuja, Nigeria. *Greener J. Agric. Sci.* 3(1): 068-072.
- Mottet, A., G. Tempio. 2017. Global poultry production: current state and future outlook and challenges. *World's Poultry Science Journal.* 73(2): 245-256.
- Najamuddeen, G., M.A. Saulawa, S. Ukashatu, U.B. Kyiogwom and A.L. Ala. 2012. Structure and conduct of beef marketing in Sokoto metropolis, Sokoto State, Nigeria. *Sci. J. Biol. Sci.*1(3): 81-85.
- National Population Commission (NPC) 2016, Provisional Census Figure. Abuja, Nigeria.
- Ojo, S.O. 2003. Productivity and Technical Efficiency of Poultry egg Production in Nigeria. *Int. J. Poult. Sci.* 2(6): 459 – 464.
- Oladipo, F.O. and O.A. Adekunle. 2010. Empirical determination of socio-economic status and its relationship with selected characteristics of rural male farmers in Kwara State, Nigeria. *Res J. Agric. Biol. Sci.* 6(1): 64-76.
- Olagunju, F.I. and R.O. Babatunde. 2011. Impact of Credit on Poultry Productivity in South West Nigeria. *J. Agric. Biol. Sci.* 6(10): 105-117.
- Petracci, M., M. Bianchi, S. Mudalal, C. Cavani. 2013. Functional ingredients for poultry meat products. *Trends Food Sci. Technol.* 33(1): 27-39.
- Siegert, W., M. Rodehutsord. 2019. The relevance of glycine and serine in poultry nutrition: A review. *Brit. Poultry Sci.* 60(5): 579-588.
- van Vliet, S., J.W. Beals, J.T. Parel, C.D. Hanna, P.L. Utterback, A.C. Dilger, A.V. Ulanov, Z. Li, S.A. Paluska, D.R. Moore, C.M. Parsons and N.A. Burd. 2016. Development of intrinsically labeled eggs and poultry meat for use in human metabolic research. *J. Nutrit.* 146(7): 1428-1433.
- Yau, H.K. and H.Y.H. Tang. 2018. Analyzing ecology of Internet marketing in small- and medium-sized enterprises (SMEs) with unsupervised-learning algorithm. *J. Marketing Anal.* 6(2): 53-61.

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