

THE POTENTIAL AND LIMITATIONS TO SELF SUFFICIENCY IN LIVESTOCK PRODUCTION IN NIGERIA



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ECONOMICS OF "POULTRY EGG" MARKETING IN IBADAN METROPOLIS

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Introduction

Egg is an important source of raw materials used in the manufacturing and processing of food in Nigeria. It is a very cheap source of input to agro-allied industries, which utilize it in the production of food, drink, baking of confectionaries and in propagation of viruses in vaccine production. It therefore helps to generate employment for both young and old people in Nigeria. The egg industry is the main livelihood stock industry in the Southwestern region of Nigeria (Bukah, *et al*, 1997). Apart from providing direct employment and livelihood to thousands of people, it also provides a remarkably high quality, nutritious food, especially animal protein, in discrete, convenient and handy packets.

The egg marketing business provides income for thousands of retailers, revenue for government in form of tax, market poultry equipment manufacturers and for animal health products. According to Kekeocha (1995), the tasks involved in the marketing of eggs and poultry are collection of shell eggs from farms, grading and standardizing of egg, processing and packaging into useful forms that are stable and convenient, transportation to a grading, packing or processing plant provision of storage facilities, provision of storage facilities, movement of the eggs and poultry products through wholesale and retails channels, and final delivery of the product to consumers at a convenient place and time.

When there is huge or excess production of table eggs in a geographical location without concomitant demand or marketing information, this leads to defective or distorted marketing mechanism which might render the economy imbalance in terms of egg glut (producers) and scarcity (consumers) on the other hand. This scenario creates supply-demand gap situation. The marketing of egg and its intricacies in Nigeria has not been accorded adequate attention. The availability and consumption of animal protein in Nigeria is far below the level recommended by FAO (1990) due to the scarcity or high cost of eggs. Consequently, the average Nigerian has been forced by hard conditions to survive only on imbalanced protein-deficient diets. This development does not compare favourably with the situation of things in the more advanced countries of the world.

Those engaging in egg marketing have to share in the mounting problems confronting egg producers, as reflected by the marketing margins, apart from their own problems. Poor transportation is the major problem confronting egg marketers. Also, cracking of eggs during transportation (due to deplorable state of the roads), results in economic loss. Hence, there is therefore, the need to determine the marketing structure, conduct and performance of eggs in the study area. This will ultimately help in bridging the supply-demand gap and promote effective distribution and availability as well as affordability of egg when and where it is needed, as well as, improving the protein intake of Nigerians.

The broad objective of the study is to appraise economically the marketing of poultry egg. The specific objectives are to determine the market margins in egg distribution and to find out the degree of concentration of wholesaler and retailers in the study area.

Methodology

The study was carried out in and around Ibadan metropolis in Oyo State, Nigeria. Ibadan is the largest city in Nigeria and in West Africa. The city is located in the southern part of the State, Ibadan is a metropolitan city with different forms of activities adequately represented ranging from banking, marketing, schools and other commercial enterprises (Filani *et al.*, 1984). Ibadan metropolis consists of five local government areas, which are Ibadan North, Ibadan North-West, Ibadan North-East, Ibadan South-West and Ibadan South-East.

Stratified sampling was used to collect data from poultry egg merchants. The population of the markets was stratified into wholesaler and retailers. However, random selection of the farms (egg producing) in the metropolis was made. The randomly selected farms were later grouped into small-scale, medium-scale and large-scale farms. Farms with 500-4999 laying birds were considered as small-scale farms, while those farms with 5,000 – 25,000 as medium-scale, while those above 25,000 laying birds were considered as large-scale farms (Olayide *et al* 1979).

The data for this study came from primary sources. 120 questionnaires were administered; 20 to producers and 100 to marketers, while 17 and 82 were used in the purpose of analysis of this study. Three analytical tools were used. These are –Descriptive statistics, Gini coefficient (Lorenz curve) analysis. The study will analyze the output of egg producers in relation to the distribution, marketing margins, marketing functions and market structure, conduct and performance in the study area.

(i) Descriptive Statistics will include the presentation of data collected in form of tables and charts for making adequate conclusion and interpretation.

(ii) Gini Coefficient (Lorenz Curve) Analysis was used to determine the degree of concentration of egg marketers in the study area. Geographically, this was obtained by plotting cumulative proportion of sales earnings (wholesalers or retailers) against the cumulative percentage of number of sellers.

However, since the Lorenz curve would not give the actual degree of concentration in terms of value, Gini coefficient analysis was used to obtain this value. Gini coefficient was obtained

by subtracting the product of percentage of the distributors and cumulative percentage of scale revenue from one. It can be expressed as :

$$\text{Gini coefficient} = 1 - \sum (\% X \% Y)$$

Where %X = the percentage of the distributor
%Y = the cumulative percentage of sale revenue.

$0 < G_c < 1$, A Gini coefficient of zero implies perfect equality in the distribution while a Gini coefficient of one implies perfect inequality. In practice, the actual value of the Gini coefficient lies between these two extremes. The closer the value to unity, the greater is the degree of inequality and therefore, the higher is the level of concentration, and vice versa.

Results and discussion

Marketing margins of marketers per tray: Table 1 shows that the wholesalers made an average of N10 market margin on every sum invested per tray, while the retailers made an average amount of N30 invested per tray. The retailers had limited economies of scale, while the wholesalers enjoyed greater profit earnings based on volume of sales.

Table 1: Marketing Margins of Marketers Per Tray

Grade of eggs	Wholesalers			Retailers		
	Average cost per tray	Average selling price per tray	Percentage market margin	Average cost per tray	Average selling price per tray	Percentage market margin
Small	200	210	5.00	210	240	14.30
Medium	230	240	4.35	240	270	12.50
Large	250	260	4.00	260	290	11.54

Source: Field survey

Table 2 indicates that the retailers made an average sum of N750 on 25 trays of medium-sized eggs purchased. On the other hand, the

wholesalers enjoyed better economies of scale and made an average market margin of N4,332.6 on 415 trays of medium-sized eggs purchased.

Table 2: Calculations on Economies of Scale of Marketers

No of trays	Retailers		No of trays	Wholesalers	
	percentage average calculation	average market margin		percentage average calculation	Average market margin
10	12.5% of ₦2400	₦ 300	50	4.35% of 11500	₦ 500.25
15	12.5% of ₦ 3600	₦ 450	150	4.35% of 36000	₦ 1566
25	12.5% of ₦ 6000	₦ 750	250	4.35% of 60000	₦ 2610
30	12.5% of ₦ 7200	₦ 900	415	4.35% of 99600	₦ 4332.6
35	12.5% of ₦ 8400	₦ 1050	650	4.35% of 156000	₦ 6786

Source: Profit per market calculated.

Distribution of Egg Marketers Based on Other Commodities/Job Handled (Specialization):

Table 3 shows that 44.44% of the wholesalers surveyed handled egg sales only while 8.12 percent of the retailers handled egg sales alone. Besides, 53.33 percent of the wholesalers

handled other commodities. Furthermore, 89.18 percent of the retailers handled other commodities. This could however be explained in terms of the risk attitudes and high diversification of the retailers by not "putting all their eggs in one basket".

Table 3: Distribution of Egg Marketers Based on Other Commodities Handled (Specialization)

Commodities handled	Wholesalers		Retailers	
	Number	Percentage	Number	Percentage
Egg only	20	44.44	3	8.12
Egg and other commodities (Bread, yam, provision etc)	24	53.33	33	89.18
Egg and other jobs (civil servant apprentice)	1	2.22	1	2.70

Source: Field survey.

Determination of Marketers Concentration:

The curves in figures 1 and 2 illustrate the level of concentration in both retail and whole poultry (chicken) egg market in the study area. The curve for wholesale egg marketers indicates that 70% of the wholesalers accounted for 35% of the total weekly sales earnings, the remaining 30 percent of the wholesalers accounted for 65 percent of the total weekly sales earnings.

In retail market however, 60% of the retailers accounted for 28% of the total weekly sales earnings, the remaining 40% of the retailers accounted for 72% of the total weekly sales earnings.

In addition, table 4 shows that 24.32% of the retailers (in the range 201 – 400 weekly sales) accounted for 19.18% of the total volume of weekly sales earnings, 5.41% of the same retailers (in the range 1001 – 1200) accounted for 89.35% of the total weekly sales earnings. On the other hand, 46.67% of the wholesalers accounted for 14.62% of the total volume of weekly sales earnings in the same wholesale market of poultry egg shown in table 5.

The Gini coefficients obtained are 0.653 and 0.623 for wholesalers and retailers of poultry (chicken) egg respectively, hence, nearly perfect competitive market.

Table 4: Distribution of Retailers by Weekly Sales in Ibadan Metropolis

Sale interval (₦)	No.	% (X)	Cumulative %	Total value of weekly sales (₦)	% total sales	Cumulative % (Y)	ΣXY
0 – 200	9	24.32	24.32	1200	6.09	6.09	0.015
201 – 400	9	24.32	48.64	2580	13.09	19.18	0.047
401 – 600	5	13.51	62.15	2700	13.70	32.88	0.044
601 – 800	6	16.22	78.37	4440	22.53	55.41	0.090
801 – 1000	5	13.51	91.88	4560	23.14	78.55	0.106
1001 – 1200	2	5.41	97.30	2130	10.80	89.35	0.048
Above 1200	1	2.70	100	2100	10.65	100	0.27
Total	37	100		19710	100		0.377

Source: Field survey.

Mean value of market sales = 2,815.71

Gini coefficient = 0.623

Table 5: Distribution of Wholesalers by Weekly Sales in Ibadan Metropolis

Sale interval (₦)	No.	% (X)	Cumulative %	Total value of weekly sales (₦)	% total sales	Cumulative % (Y)	ΣXY
0 – 3000	21	46.67	46.67	40590	14.62	14.62	0.068
300 – 6000	8	17.78	64.44	39750	14.31	28.3	0.051
600 – 9000	7	15.56	80.00	57900	20.85	49.78	0.077
9001 – 2000	4	8.89	88.89	42420	15.27	65.05	0.058
12001 – 15000	2	4.44	93.33	28500	10.26	75.31	0.033
15001 – 18000	1	2.22	95.56	18000	6.48	61.79	0.018
18001 – 21000	1	2.22	97.78	21000	7.56	89.36	0.020
Above 21000	1	2.22	100.00	29550	10.64	100.00	0.022
Total	45	100		277710	100		0.347

Source: Field survey.

Mean value of market sales = 6,171.33

Gini coefficient = 0.653

Fig. 1: The Lorenz Curve of the Wholesalers in Ibadan

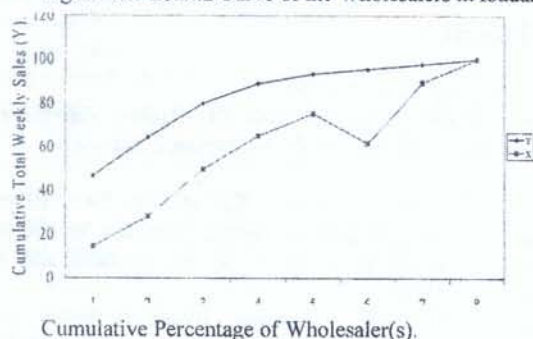
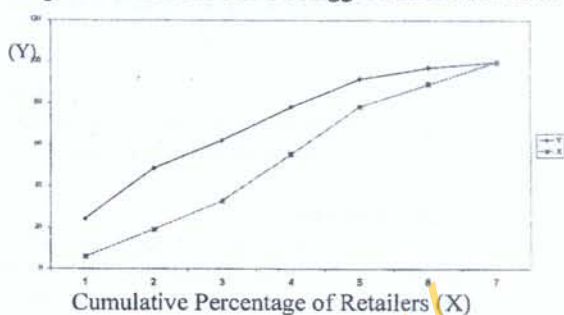


Fig. 2: The Lorenz Curve of Egg Retailers in Ibadan.



Conclusions

A marketing margin of ₦10 per tray for wholesalers and ₦30 per tray for retailers was observed. In addition, 12.5% and 4.35% marketing margin was obtained for retailers and wholesalers the medium sized egg; therefore, profit per market could be calculated based on volume of sales. Furthermore, 44.44% of the wholesalers handle egg marketing alone while 89.18% of the retailers were involved in egg marketing and other businesses like selling of bread, yam, provisions, and so on. This could however be explained in terms of higher level of diversification in retailing business. Most marketers also reported increase in demand during the on-season of yam and vice versa.

The Gini coefficient values obtained show that there was greater degree of concentration in wholesale (0.653) of poultry egg than the retail (0.623). That is, there was greater degree of inequality in the volume of sales earnings by each wholesale than that of the retailers. The main value of market sales for wholesalers and retailers were ₦6171.33 and ₦2, 815.71 respectively. The Lorenz curve also attests to this fact. The inequality in the volume of sales reflected the differences in the risk of investment. The value obtained showed that the wholesalers had higher propensity to take risk by investing a lot of capital and transporting large quantities of egg over distance, this therefore attracted more earnings and profit (not profit per tray but profit per market). Unlike the retailers

who were risk averters, invested less capital and obtained lower earnings, that is, profit per market.

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