Profitability analysis of poultry egg production and marketing in Southern zone of

Ĩ

Abstract

Plateau State, Nigeria Latu, M. Y., Wumnokol, D. P. and Guluwa, L. Y. Plateau State College of Agriculture, P.M.B 001 Garkawa Corresponding author email- latuymoses@gmail.com

Data from a survey in Southern zone of Plateau State was used to assess profitability of egg production and marketing in five markets of Southern Plateau. Primary data was obtained by means of personal interview through the use of a well-structured questionnaire administered to 20 individuals in each of the five markets (Langtang market, Shendam (Nshar) market, Namu market, Garkawa market and Mabudi market). The socio-economic characteristic of the respondents shows that most of them were experienced in the business and were mostly females (96%). The estimated Gini coefficient was 0.81296 which implies that there is a high level of inequality in the production and sole revenue of the respondents. While the gross margin reveals that marketing of eggs in the study area is profitable with gross margin per seller as N12, 029.50 and the benefit cost ratio also reveals that egg

marketing is viable in the study area as N10, 799.50 per seller. It is therefore recommended as

a means of gainful employment and mitigation to urban migration.

Keywords – Profitability, egg production, marketing

Introduction

Table eggs refer to infertile eggs produced by commercial poultry layers and used mainly for consumption by man. "Hatchable Egg", on the other hand, are fertile eggs produced by allowing selected male and female breeder stock either pullet or broiler chicken to run, perch and mate freely. While both types of eggs are consumable, table eggs have longer shelf life than fertile eggs. The fertile eggs when freshly laid has excellent interior quality, but the rate of it germ cell (ovule) development when the egg is held at ambient tropical temperature soon renders the egg unfit as food. It is only by holding fertile eggs at temperatures of $15-20^{\circ}$ C that can arrest germ cell development. Hence, in egg trade, it is infertile (table) eggs they are ordinarily produced and offered for sale to consumers. Egg is a unique source of low calorie, well balanced and easily digested nutrients for humans of all ages, particularly children, elderly people and convalescent. It is recommended that, an adult human should consume one egg daily (Okuneye, 2002). Weight for weight, an egg contains about the same amount of protein as poultry meat and pork and about three quarters that of beef and two thirds that of whole milk cheese (FAO, 2003).

Egg marketing, according to Afolabi (2007) and Ekunwe and Abufohai (2009) is a profitable enterprise and gainful employment opportunity. Therefore, it is a genuine means of income generation and poverty alleviation as poultry is widely consumed in Nigeria, not only because it is a rich source of high quality protein, but because there is little or no religious and social taboo in all parts of the country against its consumptions. Experience has shown that poultry eggs and meat are always in short supply and at exorbitant prices in rural areas where the dwellers depend on egg supply of poultry farmers who invariably are in urban and peri urban countries (Fasakin, 1984).

Therefore, there is need to study whether the egg marketers in the Southern zone of Plateau State have the attributes to run an efficient egg marketing enterprise. The socio economic characteristics, relevant activities of the egg producers and marketers along site with the profitability of egg production and marketing in the study area needs to be determined, as well as the constraints encountered by the respondents. This study was therefore conducted to assess the profitability and marketing analysis of egg Production in Southern Zone of Plateau State.

Material and methods *Study area*

The study area for this research comprises six local government areas namely: Langtang South, Langtang North, Wase, Mikang, Shandam and Quanpan local government. The zone is located in the southern guinea savanna zone of Nigeria with an area of 8.966 square kilometer which lies between latitude 80°24°N and Longitude 80°32° and 10°38° East (Ashigidigbi *et al.*, 2011).

Sampling techniques and size

A two (2) stage sampling technique was used in selecting the respondents. The first stage was purposive sampling 5 (five) markets from the zone: Langtang, Shendam (Nshar), Namu, Garkawa and Mabudi markets. The second stage was the selection of 20 (twenty) egg producers and marketers from each of the markets mentioned above using random sampling techniques. This brings to a total of 100 (hundred) sample of respondents.

Data collection

Primary data was obtained by means of personal interview through the use of well structured questionnaires administered randomly to twenty respondents in each market as this gave them equal chance to be selected.

Data analysis

Descriptive statistics such as frequencies, percentages and mean were used to analyze some socio-economic characteristics of the respondents. Gross margin analysis was used to determine the profitability of egg production and marketing as Gm = Gs - TVC

Where: Gm = Gross Margin

Gs=Gross sales

TVC = Total Variable Cost

The marketing margin for molar was used to analyze the marketing margin of egg in the study area. The marketing margin given as Retail price minus farm gate price was used to determine the egg marketing system while the viability of the business was assessed using the Benefit Cost Ratio (BCR)

BCR = PV of total revenue divides by PV of total cost

Where: PV total revenue = present value of Revenue

PV total cost = Present value of cost.

Decision criteria state that the business is profitable or viable if the BCR is greater than or equal to 1.

Results and discussions

Socio economic characteristics

The results presented in Table 1 showed that 96.7% (92) of the eggs producers and marketers were females. This may imply that, egg marketing and production is a feminine business. This result was in agreement with the study carried out by Afolabi (2007) on poultry egg in South Western Nigeria, which showed a dominating female population of egg producers and marketers in the study area (80.5%). This result also showed that the average of the respondents were within the range of 31 - 40 years old with 53.2% follow by 41 - 50 years with 20.6%. This may mean that most eggs marketers in the Southern Zone of Plateau State were in their active age of productivity as this agreed with the findings of Afolabi (2007), that majority (89%) of poultry egg producers and marketers in South Western Nigeria were between 30 and 50 years.

Latu, Wumnokol. and Guluwa

The result presented in Table 1 also shows that 73 (88.3%) of the respondents were married with an average house hold size of 2 - 4 persons (40.2%), having an average of secondary education 46.61%. This implied that most of the poultry egg producers and marketers in the Southern Zone of Plateau State did not have large household sizes and were not completely illiterates. The result also demonstrated that most of the poultry egg marketers in the zone were retailers 76 (75.7%) with few whole sellers that are quite experience in the business.

Items	Respondents	Percentage
Gender	-	-
Males	8	3.3
Females	92	96.7
Total	100	100
Married Status		
Married	73	88.3
Single	25	10.0
Widowed	2	1.7
Total	100	100
Age (in years)		
Less than 20	15	8.2
20 - 30	20	15.8
31 - 40	35	53.2
41 - 50	23	20.6
51 and above	7	2.2
Total	100	100
Level of Education		
Primary	25	36.67
Secondary	63	46.67
Tertiary	12	16.66
Total	100	100
House hold size		
1 - 2	22	23.8
2 - 4	40	40.2
5-6	28	24.0
7 and above	10	12.0
Total	100	100
Type of seller		
Producer	2	3.3
Retailer	76	75.7
Whole seller	22	21.0
Total	100	100

Table 1:	Summary	statistics of	of Socio –	economic	characteristic	s of Resp	pondents

Source: Field Survey 2018.

Profitability analysis of poultry egg production and marketing

Market structure of respondents

The result as presented in Table 2 below shows that the estimated Gini Coefficient was 0.81296. This implies that there is high level of inequality in the production and sales revenue of the respondents and consequently, high level of concentration. This is a reflection of the inefficiency in the market structure of the egg in the study area. Also, the result shows that 41 (68.8%) of the respondents bought eggs from producers while 19 (31.7%) of them both from wholesalers. This implies that most of the egg producers and marketers in Southern Zone of Plateau State normally prefer to buy from producers if there are any supplies, also, 43 (71.7%) of respondents sold only to consumers. This indicates a high level of decentralization in the marketing channel for egg in the study area.

Table 2: Estimate of Gini Coefficient of egg producers and Retailers				
Danga of income (N)	Fraguancy	Porcontago	Porcontago	Total

Range of income (N)	Fre of s	equency sellers	Percentage of sellers	Percentage cum. freq.	Total sale (N)	Percentage of total sale (N)	YX
				of sellers			
10000-10001	1	1.6	1	1.6	60000	0.95	0.00015
20000-20001	3	5	4	6.6	324400	5.14	0.00257
30000-30001	3	5	7	11.6	380000	6.02	0.00301
40000-40001	4	6.7	11	18.3	425000	6.73	0.00451
50000-50001	4	6.7	15	25	445000	6.33	0.00424
60000-60001	5	8.3	20	33.3	355000	7.05	0.00585
70000-70001	3	5	23	38.3	325000	5.62	0.00281
80000-80001	3	5	30	63.3	500000	5.15	0,00258
90000-90001	4	6.7	26	50	400000	7.91	0.00530
10000-10001	6	10	36	60	850000	13.46	0.01346
>100000	24	40	60	100	2251000	35.64	0.14256
		001 1 1	ADATA 1 (3D) 4 4050	0.01007			

Mean value of sale = N73333.93, Gini coefficient = 1 (N)YX=1-(N)0.18704=0.81296

Profitability of egg marketing

The result of gross margin analysis is presented in Table 3. The result showed that the cost of production of 227 crates per sale retail was N105.257 which was 98.4% of the total variable cost of the cost of transportation, storage, Packaging and labor accounted for 0.49, 0.47, 0.52 and 0.12 percentages, respectively. The total variable cost per retail / seller was N106, 968/227 crates of eggs while the total revenue per seller was N118, 997.50 for 227 crates of eggs. The gross margin per producer / seller was N12, 029.50. The result revealed that marketing of eggs in the study area is profitable.

Table 3: Gross margin analysis per seller of egg per month in the study are

Item	Amount (N)	Percentage
Cost of purchase of egg	105,257.00	98.40
Transport cost	503.33	0.49
Storage cost	525.25	0.47
Packaging cost	555.10	0.52
Labor cost	127.50	0.12
Market tax	125.00	100
Total Variable cost per Seller	106,968.00	
Total cost per Seller	108,218.18	
Total Revenue per Seller	118,997.50	
Gross Margin per Seller	12,029.50	
Net Revenue per Seller	10,779.50	
Source: Field Survey 2018		

Latu,	Wumnol	kol. and	Guluwa
-------	--------	----------	--------

Items	Amount (N)
Average farm gate price per crate of eggs	800.00
Average packaging cost per crate of eggs	50.00
Average transportation cost per crate of eggs	40.50
Market charges/tax per crate of eggs	30.38
Average labor cost per crate of eggs	20.50
Average retail price per crate of eggs	1000.00
Marketers profit per crate of eggs	150.00
Marketers margin per crate of eggs	200.00

Source: Field Survey 2018

Marketing margin of respondents

The result showed that the average farm gate price was N800 per crate of eggs. Average cost of packaging, transportation, tax, labor, retail price and marketers profit per crate of eggs were N 50.0.00, N40.50, N30.38, N20.50, N1000.00 and N150.00 in that order. Marketers margin per crate of eggs yielding a total margin of N200.00 which implied that there was a price different of N200.00 per crate of egg.

Viability test

The analysis shows that the business had a Benefit Cost Ratio (BCR) of 1.10. The BCR indicates that egg marketing is viable in the study area.

Conclusion

The study revealed that egg marketing and production is profitable in the Southern Zone of Plateau State. The business is highly recommended for youth in the zone as a means of gainful employment. The study also shows the inequality in the market structure by the high level of concentration in the market as seen in the Gini Coefficient and that majority of the respondents are in their active ages.

Recommendations

Egg production and marketing being a profitable economic activity, highly recommended as a means of gainful employment, poverty alleviation and arresting rural – urban human migration.

The production and marketing of eggs should be encouraged by individuals and institutions especially Colleges of Agriculture. Relevant government agencies and commercial banks should put programmed in place for granting loans to genuine poultry farmers and marketers to expand and improve their operations and by so doing ensure availability of eggs at prices affordable by all to upgrade the protein intake of an average Nigerians.

References

- Afolabi, A. J. 2007. Evaluation of poultry eggs marketing in southern Nigeria International Journal of Poultry Science. 6(5):362-366.
- Ashagidigbi, W. M., Suleman, S. A. and Adesanya, A. 2011. Technical and allocative efficiency of poultry eggs producers in Nigeria. *Medwell Agricultural Journals* 6 (4): 124-130.
- **Ekunwe, P. A and Abufohai,** 2009. Economic of poultry eggs marketing in Benin city, Edo State, Nigeria. *International Journal of Poultry Science* 8(2):166-169.
- **F.A.O. 2003**. Egg food and agricultural organization (of the United Nation service bulleting No.150.
- Fasakin, K. 1984. Integrated mixed farming feasibility report on the establishment of commercial

Profitability analysis of poultry egg production and marketing

mixed farming enterprise for the production of table eggs, poultry meat and feeds, as well as some essential and cash crops unpublished. Okuneye, P. A. 2002. Livestock SUBsector in Nigeria. Challenges and prospect, Bullion publication of CBN, vol. 26.No.3

> *Received: 10th September, 2018 Accepted: 21st December, 2018*