

Performance analysis of poultry feed marketers in Delta State, Nigeria

Theophilus Miebi Gbigbi* and V.A.A. Chuks-Okonta

Department of Agricultural Economics and Extension, Delta State University Asaba Campus.

PMB 95074, Asaba, Nigeria

Orcid ID: <http://orcid.org/0000-0002-1335-7231>

*Corresponding Author

Abstract— This study examined the performance of poultry feed marketers in the Delta State in order to increase investments by potential investors in the enterprise which is economically viable. Delta State has been chosen for the study due to its high concentration of marketers in poultry feed. A sample of 75 poultry feed marketers were randomly selected from the markets in the study area. Data were collected using structured questionnaire and analyzed using descriptive statistics, multiple regression techniques and cost and return analysis. The mean age of marketers was 45 years. Majority (57%) were males. About 64% were literate with 12 years of marketing experience. The mean household size was 6 persons. The mean bags sold daily was 3.3. Marketers sell different types of poultry feeds. The most common marketing channel was producer-wholesale-retailer-consumer. The regression results showed that buying price of the poultry feed, cost of transportation, market charges and cost of shop was negatively and significantly associated with profit while selling price, marketing experience and quantity sold showed a positive relationship with profit. The enterprise proved profitable with significant gross margin and marketing efficiency level of ₦51,181.87 and 81.6% respectively. The major constraints to poultry feed marketing were inadequate credit facility, transportation, insufficient market information and price fluctuation. It is recommended that credit facilities should be provided to the feed marketers to ease purchase of inputs. To further reduce the cost of initial purchase, the government and other agencies should consider subsidizing poultry feed.

Keywords— Performance, poultry, feed, marketers, profit.

I. INTRODUCTION

The poultry business gives the burgeoning population a chance for employment. The industry is able to engage the wide range of unemployed youth across the nation if the government pays due attention through its agribusiness value chain such as commercialization of feed and toll milling, processing of poultry products, marketing of poultry, hatchery and breeder farm operations (Eko, 2009).

Moreover, the industry can also serve as a source of foreign income to supplement crude oil, which is at present the main source of foreign income, accounting for over 90 percent of our exports (Adene and Oguntade, 2006).

Furthermore, Au (2011) asserted that since production figures for poultry were not maintained by the government, the only way to estimate the number was by the amount of feed sold. In 1997, the market in Nigeria reported an expected decrease of 225 000 tons of commercial poultry feed from 250 000 tons in 1995. In Nigeria, the feed milling industry produces only 15% of its production capacity (Au, 2011). This twist can be attributed to volatility of government import ban and the World Bank's intervention efforts led to price changes that eroded buying power and raise the costs of poultry inputs and products.

Poultry feeds are animal feed used to feed poultry birds. They are formulated from a mixture of ingredients, including cereal grains, cereal byproducts, fats, plant protein sources, animal

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protein sources and by-products, vitamin and mineral supplements, crystalline amino acids and feed additives compounded in such a way as to provide essential nutrients for sustaining optimum growth and production.

Makkar et al (2014) also noted that the majority of fine ingredients such as vitamins, minerals, amino acids and other additives in feed come from imported sources. Feed accounts for up to 50% to 70% of the cost of poultry production (Dejene et al., 2014). Many farmers have therefore inevitably opted to use less nutritious alternatives that are locally available (Gura, 2008).

Poultry feed is a poultry input and its demand is derived from the demand for the poultry and/or its products. An increasing population growth, rapid urbanization and higher revenues is the reason why demand for feed is being driven (Steinfeld, 2003; Abdullah et al., 2011).

According to Munyori et al (2014) animal feed supply is unpredictable as a result of seasonal feed supply and its causes are inefficient marketing, poor availability and poor quality of raw materials, the methods used for processing, conditions for handling and storage.

Top feeds, livestock feed (Pfizer), Rainbow feeds, Guinea feeds, Animal Care feeds and Vital Feeds are the dominating trading names in the Nigerian market.

In the poultry industry there are three kinds of feed mills: custom, toll and integrated farms. The custom miller markets its feed with registered trade names.

The federal government's recent ban on the import of frozen chicken to Nigeria – has often resulted to scarcity, asymmetrical and inadequate feed supplies. This has a very negative effect on the poultry industry.

Nigeria is currently faced with enormous challenges that hinder growth and marketing of its products and inputs in the poultry and feed mill industry (Eko, 2009). These issues include inadequate marketing and production knowledge, high feed prices, lack of government support, insufficient credit, a poor road network, insufficient storage facilities and credit sales.

The supply of fundamental inputs has persistently affected the industry, particularly when certain ingredients required in feed formulation come from abroad, according to Akinwumi and Ikpi (1980). This resulted in increased cost to end users of the product. The finding further indicates that feed accounts for approximately 65% of the overall cost, while others are day-

old chicks 18%, labor 9.5%, medicine 4%, transport 2% and other miscellaneous expenses 1.5%. This shows the highest production costs for feed components (Onuoha, 1995).

For all players in the poultry feed supply chain, an effective feed marketing network is important. Today's high feed costs and low feed quality as well as sporadic scarcity, call for enhancement in the performance of production and animal feeds marketing (Mafimisebi et al., 2002). Meanwhile, poultry feeds market performance will be difficult to analyze if the feed market structure and conduct are not understood.

Another problem was the incoherence in public policy that modified the operation of this industry, which resulted in huge devaluations of the naira, the prohibition of grain imports and the removal of government direct investment and subsidy for the sector, leading to the collapse farms owned by the farmers and resulting to unemployment (Adene and Oguntade, 2006).

This provided for large farms such as Obasanjo Farms Nigeria Ltd of Otta, Zartech Farms of Ibadan, CHI Ajala Farms of Ibadan, Animal Care Services Konsult Nigeria Ltd of Ogorein, Ogun State, Zarm Poultry and Feed mill Industry Ltd of Ilemona in Kwara State and Sambawa Farms (Nigeria Ltd of Kaduna in the north dominate the poultry industry, accumulating massive profits at the expense of poor farmers (Eko, 2009).

The marketing of their feed input is another area in which poultry and feed mills are experiencing a retrograde reaction. There is limited information on feed formulation and production, packaging, product handling, processing, storage and marketing strategies by many of the poultry producers, marketing agents and consumers (Ugwu 2009).

The amounts of poultry feed sold and income produced decreased with increased transport costs, according to Achoja, Okoh, and Ofuoku (2006). As marketers spend more transport money, their capital falls and their buying power / capacity decreases and the marketing input's share in production is reduced.

According to Ayodamola (2009), farmers have complained that the amount they spend on feed has continued to rise regularly, if there is an increase in the price of maize, soybean cake, groundnut cake or other ingredients used in feed manufacturing. Some of the time, the purchasing price of feed from the mills was so high that farmers want to get out of business. Some farmers are now seeking alternative means of feeding their birds while others are leaving the company.

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Achoja, Ofuoku and Okoh (2006) noted the high costs of poultry feed procurement at source (90%), poor roads (80%) and insufficient financing (70%), as the most prevalent socio-economic problems facing poultry feed marketing. This imposes a capital-intensive marketing of poultry feed. A large proportion of the funds invested in the marketing of poultry feed are related to this aspect, and are a long way to discouragement for many marketers, particularly resource-poor dealers.

There is limited literature regarding the marketing of poultry feed, and the closely related studies are outdated in the study area for policy formulation. Thus an indebt analysis of the performance of poultry feed marketers in Delta State, Nigeria is required.

Objectives of the Study

The broad objective of this study is to investigate the performance of poultry feed marketers in Delta State, Nigeria.

The specific objectives are to:

- (i) describe the socio-economic characteristics of the poultry feed marketers
- (ii) identify the marketing channels of poultry feed in the study area;
- (iii) determine factors influencing marketing performance of poultry feed marketers
- (iv) determine the marketing margins and marketing efficiency of poultry feed marketers
- (v) identify the constraints faced by poultry feed marketers

Hypotheses of the Study

The following null hypothesis was tested

H₀₁: Poultry feed marketing is not profitable in the study area.

II. MATERIALS AND METHODS

The Study Area

The research was carried out in Delta State. It is located between latitude 5 ° and 6 ° 30' north and longitude 5 ° and 6 ° 45' east. The annual precipitation in the coastal areas is approximately 2667 mm and in the north 1905 mm. The precipitation in July is heaviest and the break in August is short. The average temperature range in the state is between 390c and 440c. Its natural flora can be divided into rainforest,

fresh forest and mangrove swamp forest. This turns the state into an agrarian society. The population of the State is approximately 4,098,391 (NPC 2006). It consists of 25 local government areas divided into 3 agroecological regions: Delta North, Delta Central and Delta South. The people are mainly engaged in agriculture. Crops grown are cassava, yam, cocoyam, maize and swamp rice. Pigs, cattle, goats and poultry are commonly raised.

Sampling Procedure

A multistage sampling technique was involved. The first stage involved random selection of two local government areas in each of the three agro-ecological zones. This gave a total of six L.G.As out of the 25 LGAs. This area is chosen for the study due to high level of poultry production and marketing activities. Secondly, in each of the six selected LGAs, two markets based on the concentration of poultry feed shops were selected giving a total of twelve markets. Thirdly, seven respondents were randomly selected from each of the twelve markets. This gave a total of eighty four respondents. However, nine questionnaire were discarded due to insufficient information. Hence, seventy five marketers were used for the study.

Data Collection

Structured questionnaires were used for this study. The questionnaires was designed to collect information on the socio-economic characteristics of the respondents, sources of poultry feed they market, market prices, marketing cost, factors influencing marketing efficiency of poultry feed marketers and constraints faced.

Data Analysis

The analysis of data was based on the specific objectives actualized in the study. Appropriate statistical tools such as descriptive statistics, multiple regression model and marketing margin analysis were used to analyze the data.

Model specification

Marketing margin Analysis

Marketing margin of poultry feed is the difference between the price paid by the ultimate consumer and the price received by the feed miller, or the difference between the producer price and the retail price. It can be expressed as:

$$\text{Marketing margin} = \frac{\text{selling price} - \text{supply price}}{\text{supply price}} * 100$$

$$\text{Marketing efficiency} = \frac{\text{value added by marketing}}{\text{total cost}} * 100$$

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Multiple regression analysis

Regression model was used to ascertain the factors that determine the profit of poultry feed marketers.

The function was implicitly represented thus:

$$Q = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11} + u)$$

Where

Q= Profit of feed marketer (₦)

X₁=buying price of the poultry feed (₦)

X₂= selling price (₦)

X₃ = handling charges (loading and offloading) (₦)

X₄ = cost of transportation (₦)

X₅ = market charges (₦)

X₆ = Cost of Shop (₦)

X₇ = level of education (year)

X₈= marketing experience (years)

X₉= quantity sold (kg)

u =error term.

III. RESULTS AND DISCUSSION

Socioeconomic characteristics of poultry feeds marketers

Age Distribution

The result showed that most (63%) of the feed marketers were within 20 and 49 years of age with average age of 46 years. This shows that the feed marketers in the study area were still in their economic useful age. The findings are in agreement with Gaya et al (2006) who observed that those involved in economic activities like feed marketers are in their economic active age.

Sex Distribution

The outcome indicates that out of the 75 respondents 43 (57.3%) were male and 32 (42.7%) females. This shows that there are more male poultry feed marketers in the study area.

Educational Level

Table 1 shows the level of education of the poultry feed marketers. Out of a total respondents of 75, 29 (36.0%) were without formal education, 20 (26.7%) respondents had primary education, 16(21.3%) respondents had secondary education while 12(16.0%) respondent had tertiary education.

The result shows that most 64% participants in poultry feed marketing had formal education.

Market Experience

Table 1 shows the market experience of the poultry feed marketers. It indicates that 37(49%) of the respondents had 9 years' experience. This was followed closely by 35% of respondents who had 10-19years experience in the marketing of feed. The result shows that 8% had 20-29years feed marketing experience and similarly another 8% had 30-39years feed marketing experience. The mean marketing experience was 12 years. The number of years in the business of feed traders enables them to know the best ways to make profit and avoid losses and the little secrets of the business.

Household Size

The result showed that out of the 75 respondents, 71% had a household of 1–8 people, 3% had household size of 9–16 people and 1% had 17–24 persons. The mean household size was 5 persons. The result shows that the higher the number of persons in a household the most likely for the person to participate in poultry feed marketing for the survival of the family as well in the study area.

Quantity of feed traded daily

Most feed marketers (76%) sold less than 5 bags daily, 21.3% sold 5-10 bags while only 2.7% traded above 10 bags per day and the mean number of feed bags sold was 3.3.

Table 1: Socioeconomic attributes of poultry feed marketers

Variables	Frequency	Percentage	Mean
Age (years)			
20-29	9	12	
30-39	17	23	
40-49	21	28	46 years
50-59	13	17	
60-69	15	20	
Sex			
Male	43	57.3	
Female	32	42.7	
Education level			

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No formal Education	29	36	
Primary education	20	26.7	
Secondary education	16	21.3	
Tertiary education	12	16	
Marketing experience (years)			
0-9	37	49	
10-19	26	35	12 years
20-29	6	8	
30-39	6	8	
Household size(number)			
1-8	71	95	
9-16	3	4	5 persons
17-24	1	1	
Bags sold per day			
Less than 5	57	76.0	
5-10	16	21.3	3.3 bags
Above 10	2	2.7	

Types of poultry feeds marketed

The result showed that 36% of the respondents traded broiler mash. This was followed by 24% trading layer mash. About 14.7%, 13.3% and 9.3% traded chicks feed, grower mash and turkey mash respectively. The least traded feed was local feed representing 2.7% of the respondents.

Table 2: Types of poultry feeds marketed

Feed types	Frequency	Percentage
Growers mash	10	13.3
Broiler mash	27	36.0
Layer mash	18	24.0
Chicks feed	11	14.7
Turkey mash	7	9.3
Local feed	2	2.7

Marketing channels of poultry feeds

Table 3 shows that 33 (44%) respondents go through the complete marketing channel, 26(34.7%) respondents are in the category of producers-retailer-consumer while 16(21.3%) respondents move product from producers directly to consumers skipping the wholesaler and retailer.

The marketing channel is the conduit and market sequence by which goods pass from producers to consumers. The distribution system carries out transporting products to customers from suppliers (Arene, 2003). These actors within the marketing channel are the producers, wholesaler- retailers and the consumers. (Achison, 2000) reported that directions of channel is often affected by the nature of the product.

Table 3: Marketing channel of poultry feed marketers

Channel	Frequency	Percentage
Producer-wholesaler-retailer-consumer	33	44
Producer-retailer-consumer	26	34.7
Producer-consumer	16	21.3

Factors Influencing Poultry Feed Marketing

In this study, four regression analysis (linear, semi log, exponential and double log) were used to analyze the effect of some selected variables as it influence profit of feed marketers. The semi-log functional form in the regression analysis gave more statistically significant coefficients and higher magnitudes of R square and F value, and was chosen as the lead equation. In the estimated regression model attempt was made to identify which of the coefficients of the selected variables provide a statistically significant contribution to the specified model. Seven of the nine parameter included in the model were significant. This parameter relates to buying price of the poultry feed, selling price, cost of transportation, market charges, cost of shop, marketing experience and quantity sold.

The coefficient of multiple determinations (R^2) of the regression output indicated that 49% of the variation in profit realized by the marketers was attributed to variations in the independent variables while the remaining 51% was due to error term. The F-statistic value of 6.91 indicated that collectively all the socio-economic characteristics of the poultry feed marketers significantly influenced profit, and that the regression model was a good fit for the data. It therefore

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means that these seven variables contributed to 49% variation of the dependent variable.

Buying price of poultry feed

Buying price of poultry feed of the respondents has a negative coefficient and was significant at the 5% significant level. This implies that an increase in buying price of feed will cause a decrease in the performance of the feed marketer.

Selling price

This had a positive relationship with the profit of feed marketers. This indicated that the level of education to a large extent had a great influence on profit. This is in line with a priori expectation.

Transportation Cost

This had a negative relationship with the profit of feed marketers and was significant. This implies that, as transportation cost increases, profit of feed marketers will decrease and vice versa. Any government policy that can reduce the transportation cost per kilometer will lead to growth in the profitability in feed marketing in the study area.

Market charge

Market charge of the respondents has negative coefficient and was significant at 5% significant level. This means that an increase in market charge will cause a decrease in the performance of the feed marketer.

Cost of shop

Cost of shop of the respondents has a negative coefficient and was significant at 5% level. This means that an increase in the cost of shop will cause a relative decrease in the performance of the poultry feed marketer.

Marketing Experience

The marketing experience is expected to bear a positive relationship with profit of feed marketers. The result showed that marketing experience had a positive relationship and was statistically significant. This implies that marketers with more years of experience tend to earn more profit in feed marketing than marketers with less years of experience. Also, profit made by feed marketers will increase as the marketers experience in feed marketing increases. The number of years in the business of the trader enables him/her to know the best ways to make profit and avoid losses.

Quantity sold

This had a positive relationship with profit of feed marketers and was statistically significant at 1% level of significance. This is in conformity with a priori expectation that profit would increase as the quantity of feed sold increases. This is to say, the more the quantity of feed traded, the more the profit.

Table 4: Factors Influencing Marketing efficiency of respondents

Efficiency	Coefficient	Std. Error	T	P> t
Buying Price of poultry feed	-32.809	11.391	-.2.880	.026**
Selling price of poultry feed	56.365	17.474	.3.226	.014**
Handling charges	26.877	31.604	.850	.398
Transportation	-90.354	19.662	-4.595	.000***
Market charge	-55.085	24.895	-2.213	.030**
Cost of shop	-60.886	17.816	-3.417	.001**
Level of education	22.585	31.122	.726	.471
Experience	42.956	20.600	2.085	.041**
Quantity sold	84.486	17.815	4.742	.000***
Constant	1347.876	523.365	2.575	.012**
R-square	0.489			
F-ratio	6.91			

*** and ** = significant at 1% and 5% respectively

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Cost and return of poultry feed marketers

The result of the cost and return shows that 43.8% of the total cost of marketing of poultry feed was purchasing cost. This was closely followed by transportation cost (17.9%). Other cost involved were cost of renting shop(11.3%) promotion cost(8.3%), union dues (6.9) and market charge(6.8). the least cost was handling(4.9%). The total cost of marketing poultry feed was ₦62,684.80. The total revenue realized was ₦113,866.67 with a marketing margin of ₦51,181.87. The marketing efficiency of feed marketers was 81.6%. This suggest that poultry feed marketing is profitable in the study area.

Table 5: Cost and return of poultry feed marketers

Variables (₦)	Average amount (₦)	Percentage
Handling	3062.93	4.9
Union dues	4350.53	6.9
Market charge	4284.00	6.8
Cost of renting shop	7069.47	11.3
Transport	11221.33	17.9
Purchasing Cost	27475.20	43.8
Promotion Cost	5221.33	8.3
Total Cost	62684.80	
Total Revenue	113,866.67	
Marketing Margin	51,181.87	
Marketing Efficiency	81.6%	

Constraints Facing Poultry Feed Marketers

Table 6 shows the constraints militating against the performance of poultry feed marketers. The result indicates that most 42.7% poultry feed marketers had the problem of inaccessibility to credit facilities. Transportation follows closely with 18.7%, insufficient market information was 16%, price fluctuation had 12%, inadequate storage facilities had 8% and union dues is the least with 2.7%. The study corroborates with Aryeetey et al (1994) who reported lack of credit as a constraint in the case of Malawi.

Table 6: Constraints faced by poultry feed marketers

Constraints	Frequency	Percentage
Transportation	14	18.7
Insufficient market information	12	16
Inadequate Storage facilities	6	8
Price fluctuation	9	12
Inaccessibility to credit	32	42.7
Union dues	2	2.7

IV. CONCLUSION

The study was aimed at the assessment of poultry feed marketing in Delta State. The findings showed that majority of marketers' falls within the active age. Poultry feed marketing in Delta State, Nigeria was a profitable enterprise dominated by male marketers. The marketers were efficient in the business. In order to maximize competitiveness, necessary steps should be taken to mitigate the constraints of this study in order to improve marketers benefit. It is therefore recommended that

- i. Women should be encouraged to venture into poultry feed marketing.
- ii. Local feed marketing should further be encouraged.
- iii. Credit facilities should be provided to the feed marketers to ease purchase of inputs.
- iv. To further reduce the cost of initial purchase, the government and other agencies should consider subsidizing poultry feed.
- v. Good access roads will aid marketing. Government should create better access roads to reduce transportation cost
- vi. Feed marketers should be given financial assistance. To this end micro finance institutions should be encourage to lend more to poultry feed marketers in order to expand their business

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