



Full Length Article

Economic Analysis of Fresh Fish Marketing In Maiduguri Gaboru Market and Kachallari Alau Dam Landing Site of Northeastern, Nigeria

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ABSTRACT

This study was to determine the economic analysis of fresh fish marketing in Maiduguri Gaboru market and Kachallari Alau Dam Landing Site of Northeastern Nigeria. Data were collected using questionnaire from 60 fish marketers selected randomly. Descriptive statistic, linear regression and market margin were used to analyze the data. The results indicated that majority (81.67%) of the marketers were males while 18.33% were females. The years of marketing experience indicated that 46.67% had marketing experience of 6 – 10 years. Age of the marketers indicated that 61.67% of the marketers had ages, which ranged from 20 – 30 years. Majority (31.67%) of the marketers had Qur'anic education with (10%) not educated. Purchase price, transportation cost and tax had positive and significant coefficients of 1.36026, 2.78497 and 24.4560, respectively indicative of major determinants of selling price in Maiduguri Gaboru market, while purchase price had coefficient of 0.73334 (significant at 1%) which was the major determinant of selling price at the landing site. The Marketing margin was 38.378%, while the producer's share was 61.623%. Problems associated with fish marketing included spoilage during storage (30%); high cost of fishing materials (23.33%) and high cost of transportation (13.33%). Therefore, it was recommended that tax rate should be moderate and should be regulated by government. Formation of co-operative societies should be encouraged to help in the provision of storage facilities and vans for the transportation of fresh fish in good time.

Key Words: Fresh fish; Marketing; Maiduguri; Nigeria

INTRODUCTION

The term fish is a diverse group of animal that live and breath in water by means of gill. Fish is one of the most diverse groups of animals known to man with more than 20,500 species. There are more species of fish than all other vertebrate (Eyo, 1992). Fish is the most important animal protein food available in tropics. In Nigeria, fish constitute 40% of protein intake (Eyo, 1992). It also provides employment opportunities to many rural dwellers in different fields of fishing activities such as production, processing, preservation and transportation.

In marketing, fresh fish passes through various market participants and exchange points before they reach the final consumers. These market intermediaries are the whole-sellers and retailers. Both play an important role in the marketing system. At all stages in the marketing chain, fish has to be packed and un-packed, loaded and un-loaded to meet consumers demand. Each handling cost will not amount to much but the sum total of all loading can be significant, depending on the length of chain. This makes a

greater difference in price paid between urban consumers and at the end of the chain and farm gate price at the beginning of the chain. This can lead to a greater or wider market margin between the producer and the final consumers. If the market margin is high, it may be used to argue that producers or consumers are being exploited. However, high margin can not often be fully justified unless the costs involved are fully understood and reasonable.

Fish supply and marketing suffer from various set backs ranging from shortage of supply, price fluctuation due to drying up of the source, spoilage in transit etc. (Tomek & Robinson, 1981). Despite these, the agencies involved in the marketing of the commodity appear to be on the increase as a result of increase in the population and therefore, the demand tends to be high. Tomek and Robinson (1981) indicated that increase in concentration implies more scope for the middleman to exploit either the consumers by charging high or the producer by paying them lower price. Market margin is an important indicator of market performance (Olukosi & Isitor, 1990). The middlemen performing the role of marketing are being accused of

earning higher profits in the marketing system (Bryceson, 1993). In the area of marketing, empirical research (Hassan *et al.*, 2005; Maqbool *et al.*, 2005; Ali & Iheanacho, 2007) on other agricultural commodities was carried out but none captures fresh fish marketing in the area included in this study.

The main objective of this study was therefore to determine the performance of fish markets in Maiduguri Gamboru market and Kachallari Alau dam landing site of Borno State, north eastern Nigeria.

MATERIALS AND METHODS

Study area and data collection. The Study Area was Borno State, Nigeria. It has land area of about 67,436 km² lying roughly between latitude 10^o09'N and 13^o44'N and longitude 11^o36'E and 14^o38'E. Maiduguri Gamboru market is within Maiduguri Metropolis and Kachallari Alau dam landing site is about 15km from the Maiduguri Metropolis. Purposive and random sampling was used. Two markets were selected. Gamboru market and Kachallari Alau dam landing site were selected for the study, being two of the main fish markets in the study area. The sample for the study was drawn using random sampling from the stated markets. Thirty respondents (fish marketers) were selected from each market given a total of 60 respondents. Data for the study were collected from primary and secondary sources. Primary data were collected through structured questionnaires administered to fish marketers and secondary source of information comprised of published material such as journals, textbooks, newspaper etc. Primary data collected included socio-economic variables such as gender, age, educational status, price, cost and return and sales and problems associated with fish marketing.

Analytical technique. Descriptive statistics, Ordinary Least Squares (OLS) regression Technique and marketing margin were used in the analysis.

Descriptive statistics. Descriptive statistics involving the use of measure of central tendency such as, frequency, percentage and chart were used to analyze socio-economic characteristics of fish marketers and problems associated with the marketing.

Ordinary least square (OLS) regression technique. Multiple regression using OLS were used to determine the effect of marketing cost on the selling price of fresh fish in Maiduguri Gamboru market and Kachallari Alau Dam landing site. The model was specified as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + U$$

Where:

Y = Selling price of fresh fish per barrel

a = constant

X₁ = Transportation cost

X₂ = Purchase price

X₃ = Tax

X₄ = Storage cost

b₁... b₄ = coefficients

X₁ ... X₄ = independents variables

U = Disturbance term.

A priori, the coefficients of the independent variables were expected to be positive and have significant relationship with the dependent variable, indicating effect of marketing costs on the selling price.

Marketing margin analysis. Market margin if not perfect and not static it is also a measure of market performance. Marketing margin is the difference between the price paid by consumer and that received by the producers. It expressed as follows:

$$\text{Marketing margin} = \frac{\text{Selling price} - \text{Purchase price}}{\text{Selling price}} \times 100$$

RESULTS AND DISCUSSION

Socio-economic characteristics of the marketers. The socio-economic characteristics of the marketers, which include their age, gender, marketing experience and educational level are presented in Table I.

Data showed that the marketers between the ages of 20 – 30 years have the highest percentage (61.67%) followed by those above 40 years (21.67%) and between the ages of 31 – 40 years (16.67%) (Table I). It can be concluded that most of the marketers are in their economic active years. The table further reveals that male respondents (81.67%) form the greater proportion of the marketers compared with female respondents (18.33%). This implies that both male and female participate in the marketing of fish, males being dominant. Female are therefore not left out in fish marketing. This is further supported by Williams and Awoyomi (1998) who observed that women in small –scale riverine fishing villages also perform other types of income –earning activities to supplement the household income. Such income sources were income earned through sales of fisheries products and social services in fish distribution and marketing.

The data illustrated that 10% of the marketers have not had any formal education, 26.67% had attended primary school and 28.3%, had attended secondary school, 3.3% had attended a tertiary institution, and 31.67% had attended Qu'ranic schools. It can be concluded that most of the marketers did not have formal education, which seemed to be the major reason of slow rate of adoption of innovation in fish marketing. This finding substantiated the findings of Lawal and Idega (2004) who observed that the level of education attended by the marketers to a large extent determine the strategies, which he/she may use to solve his/her marketing problem and to adopt new innovation without difficulties that will increase his profit as soon as they became available to him/her.

Marketers with marketing experience of about 1 – 5, 6 – 10 and 11 – 15 years constituted about 23.33, 46.67 and 20% of the total, respectively. The marketing experience is

Table I.

Socio-economic Variables	Frequency	Percentage (%)
Age		
20 – 30 Years	37	61.67
31 – 40 Years	10	16.67
Above 40	13	21.67
Total	60	100
Gender		
Male	49	81.67
Female	11	18.33
Total	60	100
Educational level		
Attended no School	6	10
Primary	16	26.67
Secondary	17	28.3
Tertiary	2	3.3
Qu'aranic	19	31.67
Total	60	100
Marketing Experience		
1 – 5 Years	14	23.33
6 – 10 Years	28	46.67
11 – 15 Years	6	10
Above 15	12	20
Total	60	100

Table II. Regression estimates of marketing costs against selling price in Maiduguri Gaboru Market

Variable	Coefficients	T-Ratio
Transportation cost	2.78497** (1.36026)	2.05
Purchase price	1.03014* (0.08757)	11.76
Tax	24.4560** (11.9070)	2.05
Storage cost	-0.37926 ^{NS} (2.36312)	-0.16
R ²	0.9791	

* = Significant at 1%; ** = Significant at 5%; NS = Not Significant; Figures in parentheses denote standard errors

Table III. Regression estimates of marketing costs against selling price for Kachallari Alau Dam landing Site

Variable	Coefficients	T-Ratio
Transportation cost	-3.07526 ^{NS} (27.9461)	-0.11
Purchase price	0.73394* (0.17052)	4.30
Tax	20.2946 ^{NS} (13.5840)	1.49
Storage cost	-15.2868 ^{NS} (85.1216)	-0.18
R ²	0.6340	

* = Significant at 1%; ** = Significant at 5%; NS = Not Significant; Figures in parentheses denote standard errors

important in determining the level of profitability obtained by a marketer. The more years of marketing experience the more knowledge and profits the marketers tends to get, as he/she will use his/her understanding of the marketing system, market condition, market trends and price etc.

Effect of marketing cost on selling price. The effect of marketing cost on the selling price of fresh fish was estimated by the use of multiple regression (Tables II-IV).

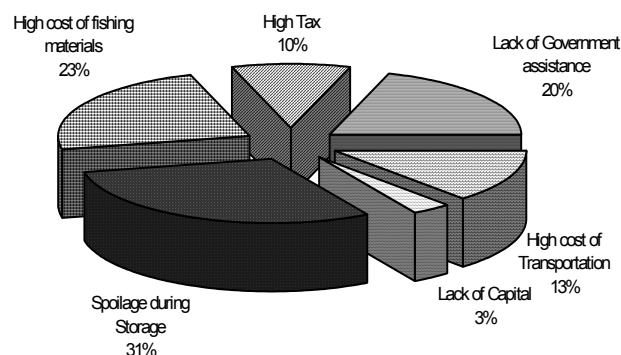
Result revealed that purchase price had coefficient of 1.03304 with T-ratio of 11.76 significant at 1% indicative of the major determinant of the selling price in Maiduguri Gaboru fresh fish market (Table II). Transportation cost

Table IV. Regression estimates of marketing costs against selling price

Variable	Coefficients	T-Ratio
Transportation cost	-0.72406 ^{NS} (2.23103)	-0.32
Purchase price	0.88813* (0.10562)	8.41
Tax	25.0868* (9.19809)	2.73
Storage cost	-3.63559 ^{NS} (7.53193)	-0.48
R ²	0.7973	

* = Significant at 1%; ** = Significant at 5%; NS = Not Significant; Figures in parentheses denote standard errors

Fig. 1. Distribution of the problems associated with fish marketing



and tax had coefficients of 2.78497 and 24.4560 (significant at 5%). The implication is that the higher the transportation cost and tax paid by marketers the more the prices paid by consumers. The storage cost had negative coefficient which means cost of storage had no impact in the selling price in the study area.

Selling price is significantly influenced by purchasing price (Table III). This can be attested by the positive and significant coefficient of 0.73394 (significant 1%). The purchase price is, therefore, the major determinant of selling price at the landing site of Alau Dam of Kachallari Village. Tax had positive coefficient of 20.2946 but not significant. The transportation and storage costs had coefficients of -3.07526 and -15.2868, respectively and not significant. The implication is that at the landing site, marketers don't pay transportation and storage costs. They sell to marketers that come from the regional markets.

Result of regression estimates show that the purchase price had a coefficient of 0.88813 with T – ratio of 8.41 which is significant at 1% indicative of positive relationship between the selling price and the purchase price for both markets Table IV. Tax as a marketing cost also had positive and significant coefficient indicative of one of the determinants of selling price of fresh fish in the study area. Positive coefficients indicated purchase price and tax as the major factors that determine the rise in price of fresh fish in Gaboru market and Kachallari Alau dam landing site. Insignificant coefficients exhibited by transportation and storage costs were as a result of one market (Kachallari landing site) being producer market. This may be due to the

fact that most of marketers at Kachallari Village market of Alau Dam don't pay transportation nor store the fish rather they sell their fish to marketers that came from Maiduguri Metropolis and other areas. The marketers especially at Alau Dam were more or less Fishermen and so most of them sell their fish to other fish marketers thus they don't usually store or transport the commodity.

4.3. Marketing Margin

$$\begin{aligned} \text{Marketing margin} &= \frac{11841.667 - 7297}{11841.667} \times \frac{100}{1} \\ &= 0.3838 \times 100 \\ &= 38.376 \end{aligned}$$

Producer share = 61.623

Marketing cost share = 6.178

The Marketing margin and producer's share was 38.378 and 61.623, respectively; while the share for the marketing cost was 6.178. This marketing margin is, therefore, high compared to the marketing cost. It can, therefore, be concluded that fish marketers in the study areas are making profit.

4.4 Problem associated with fresh fish marketing. Fig. 1 shows the ranking of problems faced by the marketers. Spoilage during storage was ranked first with 30%. This is as a result of inadequate storage facilities such as refrigerators. High cost of fishing materials was ranked 2nd with 23.33%. This is in agreement with the study carried out at lake Albert by Sarnowski (2004) who observed that appropriate gears with a large mesh size are significantly more expensive than nets of a smaller mesh size. Consequently lack of government assistance was ranked 3rd with 20%. High cost of transportation was also ranked 4th with 13.33% this is a result of inadequate transport facilities. High tax imposed by government was ranked 5th with 10% and finally lack of capital was ranked 6th with 3.33%. Fish marketers encountered a number of problems in their agricultural marketing activities. For this reason, the marketers were, therefore, asked to indicate different problems they face in marketing their product.

CONCLUSIONS AND RECOMMENDATIONS

Fresh Fish marketing in Maiduguri Gaboru market and Kachallari Alau Dam landing site were analyzed and in conclusion fresh fish marketing is a lucrative business if well managed. Based on the findings of the study, the following recommendations were made: Formation of co-operative society for provision of storage facilities to reduce high cost of storage; establishment of special cool-room in the market that will be conducive for storage of fish; Government should assist the fish marketers by reducing the tax imposed on them and providing loans to the marketers and vans for the transportation of fresh fish in good time.

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(Received 29 May 2007; Accepted 07 November 2007)