

Profitability of fresh catfish marketing in Ilorin metropolis of Kwara state, Nigeria

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Abstract

This study analyzed the profitability of fresh catfish marketing in Ilorin metropolis, Kwara State, Nigeria. Multistage sampling method was used to collect data from 120 fresh catfish marketers. Data collected were analyzed using descriptive statistics; Shepherd-Futeral model, costs and returns analysis and four point Likert scale. The study revealed that most of the fresh catfish marketers (51.67%) were youth. Fresh catfish marketing is a profitable venture in the study area with a gross margin of N147.80/kg and N165.66/kg for whole seller and retailers respectively. Average Return on capital invested by both whole seller and retailers per a kilogram of fresh catfish was N1.21 and N1.19 respectively. Wholesalers have a marketing efficiency of 83.87%. The study also identified distance and price fluctuation to be their major constraints. Therefore the study recommends that, fresh catfish marketers should pool their resources and social capital to combat their constraints and reap the benefits of economies of scale. Also, strategies aimed at lowering marketing cost should be vigorously pursued.

Keywords: fresh catfish, profitability, marketing and Ilorin metropolis

1. Introduction

Fish and fish products are known worldwide as very important diets because of their significance in improving human health and their high nutritive value. Fishes are found throughout the world, from nearly all aquatic environments inhabiting an estimated 20,000 or more fish species. About 60% of these fishes live in marine water, the remaining 40% are found in fresh water. (Garcia *et al.* 2005)^[6]. The major species of cultured fish in Nigeria include tilapias, catfish and carp. Adewumi, and Olaleye (2011)^[2], observed that, the African catfish species (*Clarias gariepinus* or *lazera*) are the most resistant, widely accepted and highly valued fish that are cultivated in Nigeria. *Clarias* spp. (*C. lazera* or *gariepinus*) popularly known as catfish has no scale, has omnivorous feeding habit, and preys heavily on other species and even on its own fry and fingerlings. Catfish are usually not stocked alone but along with tilapia which provides food for it, it has relatively slow growth rate (when compared with common carp and *Heterotis* spp.) and the flesh is very tasty and free from bones.

The role of fisheries subsector in the Nigeria economy cannot be over emphasized. Trade invests Nigeria (2010)^[21], reported that, fishery sector is estimated to contribute 3.5% of Nigeria's Gross Domestic Product (GDP) and provides direct and indirect employment to over six million people. According to Federal Department of Fisheries, (FDF, 2009)^[5], fish occupies a unique position in that it is the cheapest source of animal protein consumed by the average Nigerian, accounting for up to 50% of the total animal protein intake. Furthermore, agricultural sector of the Nigerian economy employs about 70% of the active labor force.

The Federal Department of Fisheries, FDF, (2009)^[5] further noted that, Fish constitutes 41% of the total animal protein intake by the Nigerian; hence there is great demand for fish in the country. Regrettably, the total aggregate domestic fish supply from all sources (capture and culture fisheries) cannot meet the demand in Nigeria. The federal government

of Nigeria through the Minister of state for agriculture (Lokpobiri) has said that Nigeria currently has a supply gap of about 2.1 million metric tons of fish. Lokpobiri said Nigeria current annual national fish demand is in excess of 3.2 million metric tons. The national production is about 1.1 million metric tons from all sources, including aquaculture, artisanal and industrial fishing sectors, leading to a supply shortfall of about 2.1 million metric tons. To bridge the aforementioned gap in the country's demand and supply of fish, Nigerians must turn to their underutilized in-land water for improved fish production and aquaculture (thisdaylive.com, 2018)^[20]. However, an increase in catfish production depends heavily on available market and profitability information. An efficient market does not only link sellers and buyers in reacting to current situations in supply and demand but rather has a dynamic role to play in stimulating consumption of outputs which are essential elements of economic development Haruna *et al.*, (2012)^[7]. In their opinion, Katharina and Stefan (2011)^[9] reported that the concept of marketing subsumes a set of different innovative advertising instruments which aim at having a large effect with a small budget. Agricultural marketing is defined as the performance of all the activities involved in the flow of agricultural products and services from the initial points of agricultural production until they reach the hands of the ultimate consumers. It is concerned with all that happens to catfish after they leave the farm gate. Agricultural marketing also articulates all processes that take place from when the farmer plans to meet specified demands and market prospects to when the produce finally gets to its consumers (Haruna *et al.*, 2012)^[7].

Cat fish in Ilorin metropolis were sold in small plastic and metal containers of varying weights. Fresh catfish marketing is poorly developed in Kwara State. It is characterized mainly by the problem of inadequate market information, price fluctuation amongst others. Worst still, in the past, the government paid more attention to catfish production with little attention to the marketing despite the fact that they

need spatial marketing facilities (Idachaba, 2000) [8].

A guaranteed means of significantly solving the demand-supply gap is by encouraging the populaces to embark on widespread catfish production at different levels of production. Though, this effort must be anchored on analysis of profitability of fresh catfish marketing.

Therefore, this study mainly examined the profitability of marketing fresh catfish in Ilorin metropolis of Kwara State to serve as a guide to job seeking youth that wish to key into the marketing section of fresh catfish value chain in the study area. The study specifically examined the socio – economic characteristics of the fresh catfish marketers, the profitability level of marketing fresh catfish, determine the marketing efficiency of fresh catfish and identify constraints faced by fresh catfish marketers in the study area.

2. Materials and methods

2.1. The Study Area

This study was carried out in major fish markets within Ilorin metropolis. Ilorin is the capital of Kwara State, Nigeria. The metropolis comprises of three 3 Local government areas namely; Ilorin West, Ilorin East and Ilorin South. The choice of Ilorin metropolis for this study was deemed to be appropriate given its antecedent in fresh catfish marketing. Kwara state has a population of about 2,371,089 with a total landmass of 32,500square kilometres, most of which is arable (NPC, 2010) [11]. The State has bimodal climatic seasons, the dry season and wet season with annual rainfall ranging between 1,000 and 1,500 mm while the average temperature lies between 30°C and 35°C. The climate is conducive for fish farming, (Kwara state diary, 2002) [10]. The rainy season lasts between April and October while the dry season starts in November and ends in March of the following year.

2.2 Data collection and sampling methods

Primary data were used for the study. Multi stage sampling procedure was used to select respondents for this study. The three local governments within Ilorin metropolis was purposively selected because of the large and ready market for fresh catfish enterprise. Two communities were further selected randomly from each of the local government in the study area. In each of the six 6 communities selected, 22 fresh catfish marketers were randomly selected, given a total of 132 fresh catfish marketers used for the study and this represents 72.53% of the study population of 182 of registered fish marketers in the study area according to KWADP (2015) [23]. This is in line with method of sampling reported by Yakasai (2010) [22] who explained that to ensure fair representation of 20% up to a thousand and 10% up to 5 thousand of a population is adequate.

2.3 Analytical framework

The research is based on primary data which was collected through intensive field surveys, using structured questionnaires. Data collected were analysed using both, the descriptive statistics such as frequency and percentage (for socio – economic characteristics), Shepherd-Futeral model (to determine the marketing efficiency) farm budget model (to find the profitability), and likert scale (four point severity score analysis) was used to analyse the constraints faced by the marketers in the study area. The aforementioned were as specified below:

Shepherd - Futeral model (Marketing Efficiency)

$$ME = \frac{TC}{GI} \times 100 \tag{1}$$

Where;

ME = Marketing Efficiency of Fresh/Processed catfish

TC = Total cost incurred by marketers (purchase cost + marketing cost)

GI = Gross Income of each marketers

Gross Margin Analysis

$$GM = TR - TVC \tag{2}$$

Where:

GM = Gross Margin (N/Kg)

TR = Total Revenue (N/Kg)

TVC = Total Variable Cost (N/Kg)

$$\text{Return on investment} = \text{net farm income} / \text{total cost} \tag{3}$$

Four Point Severity Score Analysis

The constraints encountered by catfish marketers in the order of severity were determined through 4 point severity score analysis

The following scaling points were adopted: very severe (4), severe (3), less severe (2), not severe at all (1).

The severity levels were determined thus;

$$\bar{x}_s = \frac{\Sigma fn}{nr} \tag{4}$$

Where \bar{x}_s = mean score; Σ = summation; f = frequency; n = severity nominal value; nr = number of respondents.

3. Results and discussion

3.1 Socio –economic Characteristics of Fresh Catfish marketers in Ilorin, Kwara State.

The socio-economic characteristics of the fresh catfish marketers in the study area was explored under the following sub headings: Age, Sex, Marital status, Level of education, Household size, and Years of experience. These were presented in Table 1.

Table 1: Socio-economic Characteristics of Catfish Marketers in Ilorin, Kwara state

Parameter	Frequency	Percentage	
Age	20-35	20	16.67
	36-50	62	51.67
	51-65	27	22.5
	>65	11	9.17
Sex	Male	81	67.50
	Female	39	32.50
Marital Status	Married	46	38.33
	Single	74	61.67
Level of Education	No formal	10	2.33
	Adult Edu.	12	10
	Primary Edu.	25	20.83
	Secondary Edu.	56	46.67
Household size	Tertiary	17	14.17
	1-5	113	94.16
	6-10	04	3.33
Years of experience	11-15	03	2.50
	1-5	86	71.67
	6-10	18	15
	11-15	11	09.17
	>15	05	4.17

Field survey 2019

Age is one of the important determinants of human reasoning, decision- making and responsibilities. Age also refers to the stage of development of an individual and is measured in years. Table 1 shows that, 22.5% of the respondents are within the age range of 51 to 65 %. while majority of the respondents (51.67%) have an age range between 36 and 50 years. The fish marketers as indicated were in their prime age and hence, economically active. They could increase their productivity if they are disposed to necessary resources. They are also in the age where they could take risks that could increase output as well as income. Alabi, and Aruna, (2006) ^[3] also concur that trader’s age may influence his resources allocation, reasoning and management ability. However, middle aged people are loaded with societal responsibilities with high expectations of life. Also, the dependant population relies significantly on the working population, therefore, they are forced to engage in economic activities to live up to expectation.

Depending on the gravity of labour, religion and beliefs which varies occupations are to certain extent sensitive to gender. The position of gender in this study is presented in Table1. Marketing of fresh catfish in the study area are male– dominated. The percentage of the male that are involved in the marketing of fresh catfish is 67.50% while that of their female counterpart is 32.50%. The dominance of the male gender particularly in the fresh catfish marketing could be attributed to drudgery and tediousness of the activity. This result is in line with Otitolaye and Adejo, (2010) ^[17], who are of the opinion that fish marketing is male - dominated because of the stress and laborious nature of fisheries activities.

The marital status of respondents indicates that 38.33% of the respondents were married while 61.67% of the respondents are single.

Education connotes the formal training an individual obtained. This is represented by the number of years a person spent in formal school. Table 1 depicts that only 2.33% of the respondents in the study area have no formal education, while 46.67% of the respondents had secondary education. The fresh fish marketers in the study area can be said to be literate since only a small portion of them had no formal education. This is a healthy situation because through education, people could acquire skills and knowledge which are important in obtaining and analysing relevant information on fresh catfish marketing and profitability thereby increasing their social and economic wellbeing. The above result collaborates Oladipo and Adekunle (2010) ^[14] who observed that years of education determines the quality of skills of any entrepreneurs, their resource allocating abilities and how well - informed they are to the innovations and technologies around them.

Years of experience in this study is measured in years which an individual has had in engaging in marketing of fresh catfish in the study area. Experience could be likened to their maturity in understanding the market situation with regard to market intelligence, taking and managing risks and uncertainties in marketing activities in an attempt to generate more profits. Sadiq, *et al* (2015) ^[19] also asserted that experience reduces management risks. Evidence from the descriptive analysis of socio economic characteristics of respondents in the study area (Table 1) indicates that, 71.67% of the respondents had between 1-5 years of experience while only 4.17 % of the respondents have

experience above 15 years. The above results corroborate the finding of Onoja and Achike (2011) ^[15] who reported a positive relationship between catfish marketing experience and technical efficiency.

3.2 Marketing channel of fresh catfish

Marketing channel is the path a product follows as it moves from the producer to the final consumer. The result as contained in Table 2 reveals that marketing channel of fresh catfish in the study area is via wholesalers and retailers. The result showed that majority of fresh catfish marketers (70.83%) were retailers while 29.177% were wholesalers. This implied that people in the study area were taking advantage of job opportunity in the retailing sales of fresh catfish.

Table 2: Distribution of Marketing Channels of fresh Catfish in the study area

Channels	Frequency	Percentage (%)
Retailer	85	70.83
Wholesalers	35	29.17
Total	120	100

Source: Field survey, 2019

3.3 Profitability analysis of fresh catfish marketing in the study area

As reported by Oluwasola, and Ige, (2015) ^[16] two important parameters in marketing analysis include marketing cost and revenue. Profit is obtained when total cost of marketing is deducted from the total sales (revenue). Respondents in the study area gave remarkable and consistent estimates of farm-gate prices, quantity of products handled, handling, transport and storage cost, and taxation between various production and consumption points and the wholesale and retail prices for different market places. The cost of rent/storage constituted the most important marketing cost component apart from the purchase cost. Other important cost items include labour, transport, packaging charges and taxes.

The result of the study showed that the average total cost for marketing a kilogram of fresh catfish by wholesalers and retailers respectively was N30.96 and N18.53, resulting in total revenue of N856.20 and N1, 026.72 earned by wholesalers and retailers of fresh catfish respectively in the study area. All marketing activities other than acquisition cost of N677.44/kg for wholesalers and N842.53/kg for retailers of fresh catfish in the study area accounted for only 4.29% of the total marketing cost for wholesalers while accounting for 2.15% of the retailer’s total marketing cost. The relatively high cost of catfish in the market originated from the acquisition cost which is directly traceable to the production and other miscellaneous. The net income of N147.80 and return per naira invested of N1.21 was realized by the wholesalers while the retailers realized a net income of N165.66 and N1.19 return per naira invested. High acquisition cost would continue to keep the profit level of marketing catfish low; the resultant situation of this is low is low demand of the product in the study area.

On the whole, the magnitudes of the return on investment recorded by both wholesalers and retailers are very important factor in determining the enterprise with higher return. This is in line with the findings of Oluwasola, and Ige, (2015) ^[16]. Results of the study imply that marketing of fresh catfish by either wholesalers or retailers increased

their level of income. Also, the benefit-cost ratios implies that for any one Naira (N1.00) invested for the marketing of

fresh catfish, there is a positive return on investment in Naira terms.

Table 3: Cost and Return Analysis of Fresh Catfish Marketers per kg in the Study Area.

Parameters	Whole sellers Value N	Per cent (%)	Retailers Value N	Per cent (%)
Marketing cost				
Fish	67.44	95.63	842.53	97.85
Labour	8.54	1.21	2.95	0.34
Packaging	2.63	0.37	1.84	0.21
Transport	5.69	0.80	2.89	0.34
Tax	0.98	0.14	0.98	0.11
Rentage/storage	13.12	1.85	9.87	1.15
TC	708.40	100	871.06	100
Gross revenue	856.20		N 1,026.72	
Gross margin	147.80		165.66	
Marketing margin	N 178.77		N 184.19	
Return/ capital invested	1.21		1.19	

Source: Field Survey, 2019

3.4 Marketing efficiency of fresh catfish in Ilorin, Kwara State

Marketing efficiency is defined as the maximization of the ratio of output to input in marketing expressed in percentage (Oluwasola, and Ige, 2015) [16]. The result of market efficiency presented in Table 4 revealed that a kilogramme of fresh catfish was supplied to the wholesalers at an average rate of N677.44/ kg and sold at an average price of N856.20/ Kg in Ilorin metropolise. However, the average marketing cost and marketing efficiency were N30.39/kg and 82.74%, respectively. On the part of the retailers, the result of the study revealed that a kilogram of fresh catfish was supplied to the retailers in the study area at an average price of N 842.53 and sold at an average price of N 1026.72, incurring an average marketing cost of N18.53, and marketing efficiency of 83.87 %. From this analysis, it was revealed that marketing of fresh catfish by the retailers in the study area has the higher efficiency ratio of 83.80 %. Therefore, it can be asserted that marketing of fresh catfish in the study area (Ilorin metropolis) was relatively efficient. Higher marketing efficiency also implies that there is better distribution of the product in the market system and more people are reached with the product.

Table 4: Marketing Efficiency of Fresh Catfish in Ilorin, Kwara State

	Supply price N/Kg	Marketing cost N/Kg	Total cost N/Kg	Selling price N/Kg	Marketing efficiency (%)
Wholesale	677.44	30.96	708.40	856.20	82.74
Retail	842.53	18.53	861.06	1,026.72	83.87

Source: Field survey, 2019

3.5 Constraints faced by catfish marketers in the study area

The constraints to catfish marketing in the study area were also analysed using mean score. The analysis of the result as presented in Table 5, was based on 4-point Likert scale in which the decision rule was any value below 2.5 was not considered as a true constraint. Based on the analysis in the table, it was observed that the major constraint to fresh catfish marketing is the problem of distance (4.38) and was ranked first. Distance between the farm which is the point of production and the selling point where the consumer buy the product posed a constraint to the marketer as this has negative effect on the selling price as well as shelf life of the

fresh catfish.

Other constraints to fresh catfish marketers in the study area based on the analysis include price fluctuation (3.71 mean), transportation (3.63), and low demand (3.5) ranking 2nd, 3rd and 4th respectively, in the order of severity. This result is in tandem with the findings of Nwabunike, (2015) [12], Oladimeji, *et al.* (2014)[13] and Abah (2013)[1].

Table 5: Constraints faced by marketers in the study area. N = 120

Constraints	Very severe	Severe	Less severe	Not severe	GT	Mean	Rank
Price fluctuation	380	54	10	02	446	3.71	2nd
Storage	288	81	24	09	402	3.35	5th
Distance	460	45	16	05	526	4.38	1st
Transportation	356	60	18	02	597	3.63	3rd
Marketing information	260	75	40	20	395	3.29	6th
Low demand	340	45	38	01	424	3.5	4th
Linkage with others	140	90	76	17	323	2.69	7th

Source: Field survey, 2019

Bench mark: 2.50. Decision rule: Any constraint with mean ≥ 2.50 is a true constraint to catfish marketers in the study area.

4. Conclusion and Recommendations

This study analysed the profitability of marketing fresh catfish in Ilorin metropolis, Kwara State, Nigeria. The results showed that the fresh catfish marketing was dominated by youth (51.67%), with an age range of 36-50 years. The costs and returns analysis indicated that, the marketing of fresh catfish was profitable in the study area with a gross margin of N147.8. The Return/ capital invested of N1.21k was realized on every naira invested in a kg of fresh catfish by the wholesalers in the area. Furthermore, the study revealed that, the retailers have higher market efficiency (83.87%) while the whole sellers have a market efficiency of 82.74%. Distance, price fluctuation, and transportation are the major constraints faced by the marketers. Finally, it is recommended that Fresh catfish Marketers should strengthen their social capital by forming cooperative groups to combat the constraints faced and enjoy the benefit of economies of scale. Strategies that lower the costs of marketing should be vigorously pursued to enhance better market performance and profitability.

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