

Analysis of Profitability of Processed Catfish Marketing In Ilorin Metropolis of Kwara State, Nigeria

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Abstract:- Profit is the increase in wealth an investor has from making investment, taking into consideration all costs associated with the investment. This study examined the profitability of marketing processed catfish in Ilorin metropolis of Kwara State. Employing three-stage sampling method, purposive sampling technique was used to select processed catfish marketers in the study area to have 132 catfish marketers which represents 72.53% of the total registered population. Through intensive field survey, data were collected and analysed using descriptive statistics for socio-economic characteristics, farm budget model for profitability, Shepherd-Futeral model for marketing efficiency, and likert scale to analyse the constraints faced by the catfish marketers. Some of the socio-economic characteristics analysed include: age, marital status and years of experience. The retailers and wholesaler were observed to have return on investment of 1.79 and 1.27 respectively. The observed marketing efficiencies were 85.75% and 78.84% for retail and wholesale marketing of processed catfish respectively. The constraints that posed least effect on the marketing operations of processed catfish marketers in the study area were storage, distance and linkage with other actors with mean scores of 2.69, 3.29 and 3.35 respectively. Marketing processed catfish is a viable and profitable business in Kwara metropolis.

Keywords: Catfish, Marketing, Profitability, Market Efficiency, Constraints

I. INTRODUCTION

Fish is one of the diverse group of vertebrates with different species across the globe. They are known for their significance in improving human health and their high nutrition value. Fishes are available throughout the world from nearly all aquatic environments constituting more than 20,000 species [9]. In Nigeria, fish constitute about 40% of dietary protein intake [15]. This translates that any shortfall may be detrimental to the protein intake of the people of the nation. As a result, fishes are available in the markets as fresh, smoked, dried, chilled or frozen. And there exist no religious taboo to the consumption of fish.

In Kwara State of Nigeria, the major species of cultured fish include tilapia, catfish and carp while the most widely valued and accepted according to [3] are the African catfish species (*Clarias gariepinus* or *lazera*). The acceptance of the *Clarias* Spp. (*C. lazera* or *gariepinus*) is due to its lack of scale, omnivorous feeding habit and palatability. Catfish are usually not stocked alone but along with tilapia which provides food for it. Although, it has relatively slow growth rate (when compared with common carp and *Heterotis* spp.) but the flesh is very tasty and nearly free from bones.

In the agricultural sector of the Nigerian economy which employs about 70% of the active labour force, 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 [8]. The role of fisheries subsector in the economy cannot be undermined. As reported by [27], the fishery sector was estimated to contribute 3.5% of Nigeria's Gross Domestic Product (GDP) and provides direct and indirect employment to over six million people.

Profit generally is the making of gains from business activity for the benefit of the owners of the business. In his work, [13] posited that pure economic profit is the increase in wealth that an investor has from making investment, taking into consideration all costs associated with the investment including the opportunity cost of capital. Profitability is an important concept because it relates to the financial feasibility of expansion, or indeed starting up of an enterprise and contains information of the efficiency of the technical and managerial process. Profitability in common usage means the ability to earn profit. The profitability of any enterprise is measured in relation to the size of the business and managerial skills, and is affected by both revenue and cost. Reference [23] looked at profit as the reward for entrepreneurial decision – making and uncertainty bearing. Profit can either be positive or negative since it is a residual income. Profit differs from

rewards of other factors of production like rent, wages and interest on the point that these are all certain, while profit is tentative or fluctuates.

Marketing costs are the actual expenses incurred in the performance of the marketing functions as a commodity moves from the farm to the ultimate consumers [17]. It includes the cost of transportation and handling, marketing charges, cost of assembling, processing, distribution, cost of packaging, sales promotion and advertisement cost and other costs such as taxes, levies and exercise duties. In addition, [17] said that marketing costs are often erroneously assumed to be synonymous with marketing margin but the true relationship is that marketing margin includes marketing cost plus the normal profit (or loss) earned by the market intermediaries as the commodity passes through the marketing system.

Marketing efficiency is the measure employed most frequently in the food industry for measuring marketing performance. Reference [17] described it as the maximization of the ratio of output to input in marketing. Reference [16] stated that there are two types of efficiency; Operational and Pricing efficiencies. Operational efficiency was referred to as technical efficiency; measures the productivity of performing marketing services within the firm with focuses on the cost of providing marketing services. Pricing efficiency on the other hand, assumes a physical input - output relationship that remains constant. It is concerned with how effectively prices reflect the cost of moving the output through the marketing system.

This study mainly examined the profitability of marketing processed catfish in Ilorin metropolis of Kwara State. The outcome of this study would serve as a guiding tool to job seeking or unemployed youth that wish to key into the marketing section of catfish value chain in the study area. The study specifically examined the profitability level of marketing processed catfish, its marketing efficiency and identified constraints faced by processed catfish marketers in the study area.

II. METHODOLOGY

A. The Study Area

Kwara State is made up of 16 Local Government Areas (LGAs) covering about 32,500km with a total land size of 3,682,500 hectares. According to [26], Kwara State has a population of about 2,365,353. The state is bounded in the south by Ekiti, Osun and Oyo; in the North by Niger State and in the east by Kogi State. The study was conducted in Ilorin metropolis of Kwara State which comprised of 3 Local government areas namely; Ilorin West, Ilorin East and Ilorin South Local Government. Marketers of processed catfish from these areas formed the population for this study.

B. Sampling Method

Employing multi-stage sampling method, purposive sampling technique was used to select processed catfish marketers in

Ilorin metropolis which housed three local government areas within the city due to high level of fish marketing activities in the areas. 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 catfish marketers were selected, given a total of 132 catfish marketers and this represents 72.53% of the total population of 182 of registered catfish marketers in the study area according to KWADP (2015). This is in line with the method of sampling reported by [25] who explained that to ensure fair representation, 20% of a population up to a thousand and 10% of a population up to 5 thousand is adequate. However, a success rate of 90.91% was recorded as 120 questionnaires were returned out of the total 132 distributed.

C. Data Collection and Analysis

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) in accordance with [5] was used to analyse the constraints faced by the marketers in the study area. The aforementioned were as described below:

a. Shepherd - Futeral model (Marketing Efficiency):

$$ME = \frac{TC}{GI} \times 100 \quad (1)$$

Where;

ME = Marketing Efficiency of Fresh/Processed catfish

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

GI = Gross Income of each marketers

b. Gross Margin Analysis:

$$GM = TR - TVC$$

Where:

GM = Gross Margin (₦/Kg)

TR = Total Revenue (₦/Kg)

TVC = Total Variable Cost (₦/Kg)

c. Return on investment = Net farm income /total cost:

d. 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;

$$\bar{x}_s = \frac{\sum fn}{nr}$$

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

III. RESULTS AND DISCUSSION

A. Socio –economic Characteristics of Processed Catfish Marketers in The Study Area

The socio-economic characteristics of the catfish marketers in the study area was examined during the study. This is as shown in Table 1.

B. Age of the Respondents

Age remains one of the important determinants of human reasoning, decision- making and responsibilities. Age refers to the stage of development of an individual, either young or old which is measured in years and is expected to vary inversely to adoption of new ideas. Middle age implies economically active age that could have positive effect on aspect of the value chain from production to marketing.

Table 1 showed that majority of marketers of processed catfish (49.17%) were within the age bracket of 36 -50 years. This was followed by 20.83% for marketers within 20 – 35 years, 20% for 51 – 65 years and marketers that were greater than 65 years constituted only 10%. This indicated that in the catfish value chain, majority of the marketers were within their active and enterprising age of between 20 and 50 years. Thus, they could withstand the rigours associated with the activities of marketing along the value chain. This is important because at this age bracket, they would be willing to assume greater risk in anticipation of profit than the older or much younger ones who are often more risk averse. More so, it could be considered that middle aged people are more loaded with societal responsibilities with high expectation of life. And being a working population, the dependant population relies significantly on the working population. Therefore, they are forced to engage in economic activities to live up to their expectations. This agreed with the findings of [4] that trader’s age may influence his resources allocation, reasoning and management ability.

Table 1: Socio-economic Characteristics of Catfish Marketers in the Study Area

Parameter	Frequency	Percentage	Cumulative
Age			
20-35	25	20.83	20.83
36-50	59	49.17	70
51-65	24	20	90
>65	12	10	100
Sex			
Male	49	40.83	40.83
Female	71	59.17	100
Marital Status			
Married	73	60.83	60.83
Single	42	35	95.83
Widow	5	4.17	100
Level of Education			
No formal	10	8.33	8.33
Adult Edu.	12	10	18.33
Primary Edu.	25	20.83	39.16
Secondary Edu.	56	46.67	85.83
Tertiary	17	14.17	100
Household size			
1-5	62	51.67	51.67
6-10	31	25.83	77.5
11-15	27	22.5	100
Years of experience			
1-5	52	43.33	43.33
6-10	40	33.33	76.66
11-15	17	14.17	90.83
>15	11	9.17	100

Field Survey, 2018

C. Sex of the Respondents

Gender describes the position of an individual in terms of masculine and feminine. These are obviously put as male and female. The sex of an individual influences, to a large extent, the type of occupation the individual performs. Although, in Africa and some part of the world, it is a general phenomenon that women are weaker compared to their male counterparts. Depending on the magnitude and severity of labour as well as certain beliefs which vary from culture to culture, place to place, religion to religion, occupations are to a certain extent gender - sensitive. As shown in Table 1, marketing of processed catfish was dominated by female with 59.17% of the marketers while male only constituted 40.83% in the study area of Kwara State. This implied that gender sensitivity of processed catfish marketing inclined towards women than men such that on more women were involved in the marketing activity in catfish value chain, although the 40.83% observed for men is substantive. This was in consonance with the studies of [11] and [1].

D. Marital status

Marital status is an indication of respondents' matrimonial relationship status whether in the present or past such as married, divorced, widowed or never married. This information with respect to processed catfish marketing is as given in Table 1. The result revealed that 35% of the respondents were single, 60.83% were married while 4.17% were widow. This showed that a high percentage of processed catfish marketers were married and that majority of these married respondents shoulder lots of family responsibilities. Thus, took advantage of cheap labour supply and high demand for the product. This is in tandem with the study of [22]

E. Educational Status

Simply, education connotes the formal training an individual obtained so as to enhance reasoning. This is represented by the number of years a person spent in formal school. As presented in Table 1, the educational status obtained by the majority of the processed catfish marketers is secondary school certificate education (SSCE) which accounted for 46.67%, about 8.33% had no formal education, constituted the least percentage. However, the result revealed that 91.67% of the marketers have one form of education or the other; as such it can be concluded that the processed catfish marketers were literate in the study area since only 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 information about marketing performance in the catfish value chain, thereby increasing the social and economic wellbeing. It is also important in the management of risks associated with marketing operation and adoption new technology in the catfish value chain in the study area. The observation is in line with that of [19] that individuals with educational attainments are usually being faster adopters of innovations. It also

concretised the findings of [6], [4] and [12] who opined that years of education determines the quality of skills of farmers, their allocating abilities and how well-informed they are to the innovations and technologies around them.

F. Household Size

Household size refers to the total number of individuals (wives, children, grandchildren and extended family members) that live with and feed from the household. Household size is an important socio-economic indicator of labour. In Table 1, it is indicated that marketers with least household size of 1 – 5 members had 51.67% while marketers with largest household size of 11 – 15 members had 22.50%. This implied that the latter is opened to readily available and cheap family labour for their marketing activities. This in consonance with the opinion of [21] who posited that a large household size suggests a major source of farm labour.

G. Years of Experience

Years of experience of actors engaged in various activities along the value chain represents the technical skills and knowledge acquired in terms of operations management and analysis of their activity performance as an actor with respect to certain commodities. Experience is measured in years which an individual has had in engaging in such activity along the chain. The socio-economic characteristics of the respondents presented in Table 1 showed that majority of the marketers, 43.33% had 1 – 5 years of experience, this was followed by 33.33% who had 6 – 10 years of experience while respondents that had more than 15 years of experience in marketing processed fish constituted 9.17%. This implied that majority of the respondents may possess less marketing skills and knowledge compared to respondents who have been in the business for years. Thus, their maturity in understanding the technicalities involved in processed catfish marketing as well as understanding the market situation with regard to market intelligence and managing risks and uncertainties in marketing activities in an attempt to get more market share and generate more profits. Reference [21] asserted that experience enhances risk management. And according to [20], they posited that there is a positive relationship between experience and technical efficiency.

H. Marketing Channel of Processed 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 in the marketing domain, the marketing channel of processed catfish is via wholesalers and retailers. The results showed that majority of marketers of processed catfish (57.5%) in the value chain were retailers while 42.5% were wholesalers. This implied that people in the study area were taking advantage of job opportunity in the retailing sales of processed catfish.

Table 2: Distribution of Marketing Channels of Processed Catfish in the Study Area

Channels	Frequency	Percentage (%)	Cumulative Percentage (%)
Retailer	69	57.5	57.5
Wholesalers	51	42.5	100
Total	120	100	

Field Survey, 2018

I. Cost and Return Analysis of Processed

Catfish Marketers in the Study Area

Table 3 gave a detailed analysis of the cost incurred and return realised by the marketers of processed catfish in the study area. The marketers of the product were categorised into either wholesaler or retailer. According to [14], two important parameters in marketing analysis include marketing cost and revenue. Marketing costs are the actual expenses incurred in the performance of the marketing functions as a commodity moves from the producer to the ultimate consumers. It includes the cost of transportation and handling, marketing charges, cost of assembling processing, distribution, cost of packaging, sales promotion and advertisement cost and other costs such as taxes, levies and exercise duties [17]. Revenue on the other hand is the product of output and unit market price. [24] put that profit is obtained when total cost of marketing is deducted from the total sales (revenue).

Table 3: Cost and Return Analysis of Processed Catfish per Kg in the Study Area

Parameters	Whole Sellers		Retailers	
	Value (N)	%	Value (N)	%
Marketing Activity				
Fish	769.4	93.4	981.22	95.37
Labour	25.74	3.12	28.31	2.75
Packaging	6.06	0.74	6.89	0.67
Transport	5.9	0.72	7.7	0.75
Tax	0.37	0.05	0.6	0.06
Rent / Storage	16.27	1.97	4.09	0.4
TC	823.74	100	1028.81	100
Gross Revenue	1044.8		1199.74	
Marketing Margin	275.4		218.52	
Net Profit	221.06		170.93	
Return on Investment	1.27		1.79	

Field Survey, 2018

From the result, wholesalers of processed fish in the study area incurred an average total marketing cost of ₦823.74 to market a kilogram of processed catfish. The study further revealed that a gross revenue of ₦1044.8, net profit of ₦221.06 and return on investment of 1.27 per kilogram of the product is been made. This implied that on every ₦1:00

invested in marketing a kilogram of processed cat catfish, a profit of ₦0.27 is accrued. Similarly, it costs a retailer in the study area an average of ₦1028.81 to market a kilogram of processed catfish obtained for ₦981.22/kg, while gross revenue of ₦1199.74, net profit of ₦170.93 per kilogram of the product and return on investment of 1.79 were realised. This implied that for every ₦1:00 invested by a processed catfish retailer, ₦0.79 is made per kilogram. From the above result analysis, it can therefore be concluded that marketing of processed catfish in the study area is profitable for both wholesalers and retailers, above results corroborates the findings of [2] and [10] who also established that if efficiently managed, marketing processed catfish is highly profitable.

J. Marketing Efficiency

In relation to the view of [24], marketing efficiency was described as a measure of market performance. It has to do with the relative performance of the operations or activities employed in getting a product to the final consumer. Reference [17] expressed marketing efficiency as the maximization of the ratio of output to input in marketing expressed in percentage. Table 4 showed the marketing efficiency of marketing processed catfish in the study area of Ilorin metropolis.

Table 4: Marketing Efficiency of Processed Catfish in the Study Area

Marketer	Supply price (₦/Kg)	Marketing cost (₦/Kg)	Total cost (₦)	Selling price (₦/Kg)	Marketing Efficiency (%)
Wholesale	769.4	54.34	823.74	1,044.80	78.84
Retail	981.22	47.59	1028.81	1199.74	85.75

Field Survey, 2018

As presented in the result, the wholesaler got a kilogram of processed catfish at an average cost of ₦769.4 from the processor and made sale at an average price of ₦823.74/kg in the metropolis. However, the average marketing cost which implied the cost of value added in getting the product to the final consumer is ₦54.34/kg with a marketing efficiency of 78.84%. Similarly, the retailer got the supply of a kilogram of processed catfish for an average cost of ₦981.22 from the wholesaler and sold for an average price of ₦1199.74. This translated that the cost of added value in getting the product to the final consumer is ₦47.59/kg with a marketing efficiency of 85.75%. The observed marketing efficiencies depicted that retail marketing of processed catfish had the highest efficiency with 85.75%. Therefore, it can be asserted that retail marketing of processed catfish in Kwara metropolis was relatively more efficient than wholesale marketing of the product. The high marketing efficiency observed for the retail marketing could be attributed to the values which were added to the product which help in making it more attractive to the customers. Also, it suggested that there is better and wide coverage distribution of the product in the market system as more consumers are reached with the product at retail levels than at the wholesale levels.

K. Constraints Faced by Catfish Marketers

The constraints to catfish marketing in the study area were also examined using mean score. The analysis of the result as presented in Table 5 was based on 4-point Likert scale in which the bench mark was 2.5 any value below it was not considered as a true constraint. As given in the table, it was observed that the major constraint to catfish marketing is low demand (4.38) and was ranked first.

Table 5: Constraints Faced by Marketers N = 120

Constraints	Very Severe	Severe	Less Severe	Not Severe	GT	Mean	Rank
Market information	380	54	10	2	446	3.71	2 nd
Linkage with others	288	81	24	9	402	3.35	5 th
Price fluctuation	460	45	16	5	526	4.38	1 st
Transportation	356	60	18	2	597	3.63	3 rd
Distance	260	75	40	20	395	3.29	6 th
Low Demand	340	45	38	1	424	3.5	4 th
Storage	140	90	76	17	323	2.69	7 th

Source: Field Survey, 2018

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

This was followed by market information and transportation with mean value of 3.71 and 3.63 respectively. The constraints that posed least effect on the marketing operations of processed catfish marketers in the study area were storage, distance and linkage with other actors with mean scores of 2.69, 3.29 and 3.35 respectively. The reasons for low effect of these were due to the fact that retailers don't store the product; they get their supply and dispose them off same day and that distance travelled to locate their customers is seen as a strength rather than constraints while linkage with other co-marketer was of less concern as they often market their product independently. Reference [1] and [18] in their works shared similar observations.

IV. CONCLUSION

Marketing processed catfish was a viable and profitable business in Ilorin metropolis irrespective of the method of processing. Although, both rural and urban markets were the principal trade places for the product in the State, catfish marketers were observed to be making profit both at retailer and wholesaler levels. However, retailers made more return on investment by making ₦0.79 on every ₦1.00 invested. The higher realized may not be unconnected with the value added of time, quantity and place. This reflected in their high marketing efficiency of 85.75%. Thus, it is recommended that teaming unemployed youth should be encouraged to key in to the marketing section of catfish value chain in the study area as an opportunity to be gainfully self-employed. Governmental and non-governmental organizations should intervene in building the capacity of processed catfish marketers on information management via institutes such as Agricultural

and Rural Management Training Institute (ARMTI) for the marketers of the product in the study area

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