

COST AND RETURN ANALYSIS OF CATFISH MARKETING AMONG FISH FARMING HOUSEHOLD IN KANO STATE, NIGERIA

Umoru, G.I, Ibrahim U.M² and Buhari A K³

² Department of Agricultural Economics and Extension, Federal University, Dutsinma, Katsina State,
Nigeria

³ Kebbi State University of Science and Technology, Aliero.

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ABSTRACT:

The study analyzed the cost-benefit of Fresh catfish marketing in Kano State Nigeria. Multi-stage sampling technique was employed for the study. Kano is grouped into three agricultural zones: namely Zone I, Zone II, and Zone III. One Local Government Area was purposively selected from each zone based on the performance of fish farming and marketing. Bebeji Local Government Area was selected from Zone I, Bagwai Local Government Area was selected from zone II, and Fagge Local Government Area was selected from zone III. A total number of 32 wholesalers and 95 retailers were used for the study fish marketers were used to form the sample frame for the research. The data collected were analyzed using descriptive statistics, net marketing merging cost and return analysis and Gini coefficient cost and return analysis. The result of costs and returns analysis showed that fresh catfish marketing was found to be profitable because the total cost 56,506.88 and the revenue was N 54,556.88 which gave net Marketing Merging of N.9578.375. The return per naira invested was 1.16 kobo as profit. However, fresh catfish marketing in the study area shows that the Gini coefficient of 0.583 indicates a high level of concentration and consequently high inefficiency in the market structure. Following the findings of this research work, it could be concluded that fresh catfish marketing was dominated by male middle age group, mostly married with informal education, majority of fresh catfish marketers sourced funds for this business from their personnel savings. Fresh catfish marketers were also found to be profitable because every amount of money invest there will be a return from the investment.

KEYWORDS: Catfish Artisanal marketing

INTRODUCTION

The dietary contribution of fish is crucial in terms of animal protein, as a portion of 150g of fish provides about 50-60 percent of the daily protein requirements for an adult (FAO, 2014). Fish is any member of the paraphyletic group of organisms that consists of all gill-bearing aquatic cranial animals without digit or limbs. Fish has a high nutritional value, with a complete array of amino acids, vitamins and minerals; it has, therefore, become a very important part of the diet of many Nigerians (Akinrotimi, 2007). Advantageously, fish and related products are comparatively cheaper than other proteinous sources, like beef, pork and other sources of animal protein in Nigeria (Amao, 2006), and its protein content has higher digestibility rate compared to proteins from beef and that of other higher animals (Adamu T. (2009). Like any other animal product, 48 – 52% of fish meat is edible, easily digestible, and contains low cholesterol levels. Apart from utilization as food, fish are used in medicinal preparation (fish oils), in the fashion industry, recreation (sport fishing), and other agricultural industries; fish meals, ornamental and decorations (Bolorunduro, 2004).

Fish has become an important resource for people worldwide to substitute for other animal proteins. In most of the sub-Sahara African countries, it is a popular and highly nutritious

aquatic vertebrate. Fish provides over 18% of the total animal protein intake worldwide, with share as high as 40 – 60% in some West African States (FAO, 2002). Statistics show that approximately 200,000,000 million Africans rely on fish as an important part of their diet. In Africa, the fish sector provides income for over 10million people who engaged in fish production, processing and trade (NPAD, 2005). In Nigeria, fish is among the cheapest animal protein source and smoke fish particularly has the potential to solve the pervasive protein shortage owing to its relative affordability compared with fresh fish (Taiwo, 2012). Despite the importance of the artisanal fish industry in Nigeria as the major contributor to fish protein, it is faced with numerous constraints.

The constraints are not unconnected with the fact that fish is one of the most perishable of all staple commodities. Bolorunduro (2004) reported that in the high ambient temperatures of the tropics fish will spoil within 12 hours if not quickly processed and will be unfit for human consumption within 24 hours. In artisanal fisheries, even after the application of traditional curing practices, fish is still subject to many forms of losses and spoilage. The output of artisanal fisheries in Nigeria has not improved over time. For these reasons, the efficient marketing of fish is of paramount importance. Marketing is a management process that is saddled with the responsibility of anticipating,

identifying, and ensuring the satisfaction of consumer needs and wants with a view of generating profit (Lawrence and Sylvester, 2014). Marketing involves transporting the product to their rightful destination, storage to create a balance between demand and supply over time, sorting of the product, cleaning, grading, packaging, and value addition activities. Like other marketing exercises, marketing functions play an important role in artisanal fish marketing and according to Adegeye and Dittoh (1985) are the activities that are concerned with characteristics of agricultural produce like seasonality, bulkiness and perishability. Such functions also include the utility of form, place, time to ensure consumer satisfaction (Lawrence and Sylvester, 2014).

The broad objective of the study is to examine the Economics analysis of catfish marketing in Kano State. And the specific objectives are

- i. Describe the socioeconomic characteristics of fresh catfish marketers in the study area,
- ii. Determine the cost and returns analysis of fresh catfish marketing in the study area
- iii. Ascertain the challenges associated with the marketing of fresh catfish in the study area.

METHODOLOGY

The Study Area

The study was carried out in Kano state in North-west Nigeria. It lies between latitude $10^{\circ}30'$ North and $12^{\circ}35'N$ and $07^{\circ}44'$ and $09^{\circ}20'$ E of the prime meridian and also has the altitude of 400-750m above sea level. The State has the landmass covering nearly 20,417 km² approximately 4.7% of the total land area of Nigeria in which agricultural land accounted for 754,200ha, while forest and grazing land occupy 75,000 ha. The influence of Kano is not only demographic but also economic; this is because it represents an area of dominant influence over marketing and other agricultural activities in the adjacent areas.

According to the 2006 Census, Kano state has a population of 9,383,682 inhabitants. It is bordered by Katsina State to the North-west, Jigawa State to the south. The state capital is Kano. However, the majority of the inhabitants are Hausa-Fulani other minority tribes include Kanuri, Nupe, Yoruba, Igbo, Tiv, Ogbira and wide. However, the majority are Muslims, though non-Muslims form about 10% constituting a minority part of the population (Trade Fair, 2010). The inhabitants are mostly traders, civil servants farmers, and artisan.

Figure 1: Map of Kano State Showing the Study Areas

KANO AGRICULTURAL AND RURAL DEVELOPMENT AGENCY (KNARDA) 2012

SAMPLING TECHNIQUES

A multi-stage sampling technique was employed for the study. The study was conducted in Kano State, Nigeria. Kano is grouped into three agricultural zones: namely Zone I, Zone II, and Zone III. One Local Government Area was purposively selected from each zone based on the performance of fish farming and marketing. Bebeji Local Government Area was selected from Zone I, Bagwai Local Government Area was selected

from zone II, and Fagge Local Government Area was selected from zone III. This classification is based on the concentration of the fish marketers in the sample areas. In this work, 46, 36 and 45 functional fish marketers were used from Bebeji, Bagwai and Fage Local Government Areas, respectively. Random sampling was used to select the respondents. A total number of 32 wholesalers and 95 retailers were used for the study fish

marketers were used to form the sample frame for the research.

Method of Data Collection

Data required to accomplish the objectives of the study were obtained from primary (questionnaire/ interview schedule) and secondary (i.e. textbooks, journals and publications) A comprehensive open and close-ended questionnaire/interview schedule was developed and administered to the catfish marketers who constitute the target population of the study.

The data were collected from one hundred and twenty-seven fresh catfish marketers (127), 32 respondents out of 127 are wholesalers while the remaining 95 are retailers.

Analytical Techniques

Descriptive statistics such as frequency distribution and percentages were used to analyse some socio-economic characteristics of the respondents. Gross margin analysis was used to determine the cost and return analysis of fresh catfish marketing in the study area. Gross margin is the difference in total revenue and total variable cost (Okoh, Ugwumba and Elue, 2008). The gross margin was represented by equation

$$GM=TR-TVC$$

Where GM = Gross Margin

TR = Total Revenue

TVC = Total Variable Cost

Assuming a negligible fixed cost among the sellers of catfish interviewed, gross margin

analysis was used to determine the profitability while the internal rate of return (IRR) ratio was used to compute the return per naira invested in catfish marketing.

$$IRR = GM/TVC$$

Result and Discussion

Socio-Economic Characteristics

Age of the Respondents: The result of the study as shown in Table 1 below indicated that the maximum age of the fresh catfish marketers was 49 years, the minimum was 18 and the mean was 37.41 years and the standard deviation is 2.53. This implies that marketing activities were dominated by catfish marketers of 37.41 years in the study area. The finding is in conformity with Malami (2007) in his research work on the economics of fish production in the Maiduguri Metropolitan Area. For wholesalers and retailers, the majority of them were within the age group of (46-52) implying the possibility that the majority of the respondents were in their productive ages as defined by (FAC, 2003).

Year of experience

Years of experience is the total number of years catfish marketer acquire experience on how to market catfish it is evident from the table, that maximum years of experience catfish marketer was 10 years, the minimum was 1 year, and mean was 9.64 years. This result confirms to Orobiyi (2007) which revealed that most wholesalers and retailers have marketing

experience and can manage their business properly.

Gender

The state of being male or female with reference to social or cultural differences. Table 1 report that wholesalers and retailers had a majority of (93.75), (92.63) respectively were dominated by males. However, the fish value chain, in particular, offers an enormous opportunity for women participation as they can be actively engaged in fish processing and packaging (CBN, 2017).

Like most of the findings in the Northern part of Nigeria female participation in fresh catfish marketing activities is extremely low. This is probably due to the religious and culture of the people in the study area that left the farming activities to male in line with the finding of Tiku (2015). The results show that female wholesalers and retailers account for (6.25), (7.37) respectively.

This may be due to the retribution by religion and culture of the inhabitant in the study area. These findings are in accordance with the findings of Sale and Raji (2006) who pointed out that fish marketing business in an exclusive business for males in their study area.

4.1.4 Marital status

Marital status describes whether an individual is married or single. Marriage makes an individual more responsible and takes decisions accurately (Murtala G. 2009). The result in table 1 above indicated that the marital status of

wholesaler and retailers are (37.5), (16.80) were married, (37.50), (16.80) were single and (3.125), (6.36) were divorced and (3.125), (1.05) are widows. The result is line with Afolabi (2009) who report that married individual always engages themselves in one business or the other.

4.1.5 Educational status

Table 1 reports the educational level of the respondents. Education is a form of learning in which the knowledge, skills and habits of a group of people are transferred from one generation to the other through teaching, learning and research. The results obtained indicated that wholesalers and retailer of fresh catfish marketers have varying degree of education ranging from Information Education (50.00%), (52.84%) primary education (37.50%), (20.00) secondary education (9.375%), (11.58%) and tertiary education (3.125%), (10.53). This shows that majority of the wholesaler and retailers had formal education due to the dominance of Islamic religion in the study area. The result is in line with Barau (2014) in his study of improve fish preservation technology (chorko oven).

Profitability Analysis of Whole sellers of Fresh Catfish

Table 2 presents cost and return analysis of fresh catfish wholesalers in the study area which revealed that the average purchasing price of a wholesaler is N54,556.88 and the

total variable cost which includes the cost of haulage, storage, packaging, transport and security is N1,950 and total fixed cost of N600.

The marketing margin is N11,528.37, the net marketing margin is N9,578.38, marketing efficiency is N3.25 and the return per naira invested is N1.16 which indicates that fresh catfish marketing in Kano State is profitable.

Profitability Analysis of Retailers of Fresh Catfish

Table 2 presents cost and return analysis of fresh catfish retailers in the study area which revealed that the average purchasing price of a retailer is N10,255.23 and the total variable cost which includes the cost of haulage, storage, packaging, transport and security is N500 and total fixed cost is N600. The marketing margin is N1, 058.55, net marketing margin is N558.55, marketing efficiency is N9.83 and the return per naira invested is N1.05 which indicates that fresh catfish marketing in Kano State is profitable.

Problems of fresh catfish Marketers in Kano State

This section revealed problems of wholesalers and retailers of fresh catfish marketers in the study area. Table 3 shows that (40.625%) identified inadequate capital as their major challenges in the business, whereas (28.125%) identified the cost of transport, (21.875%) accounted for High cost of storage and the

remaining (9.375%) identified as Problem of whether fluctuation as their constraints.

Problems of Retailers of Fresh Catfish

The result reveals that (49.47%) and (24.21%) of the retailers identified poor sales and lost due to deterioration respectively as their main problems, while (15.79%) of the retailers identified lack of capital as one of their problem and (10.526%) identified the cost of transport as their problem in the business.

Conclusion and Recommendation

In conclusion, the study found that from the socioeconomic characteristic of the fish marketer's majority are male and has Formal Education male respondents were found to be dominating the fresh catfish marketing in the study area. The result of the cost and return analysis shows that fresh catfish marketing is profitable in the study area. The Gini coefficient result shows that there is a higher level of concentration in the fresh catfish market. The results show that poor sales lost due to deterioration lack of capital, Cost of transport and are the major constraint identified by the wholesalers and retailers in fresh catfish marketing in the study area.

Based on the findings of the study, the following recommendations were made:-

1. The study revealed the low participation of women in fresh catfish marketing,

thus women should be encouraged to participate in the business venture.

2. The government and private sectors should come in to establish a modern market for the effective marketing of the fish. This may help the marketing

system to be more organized, effective and solve the problem of poor sales

3. Fish vendors should be encouraged to form cooperative societies through extension agents this will assist fresh catfish marketers to have access to low-interest loans.

Table 1: Socio-Economic Characteristics of fresh Catfish Marketers by age and years of the experiences

Variables	Whole seller		Retailers	
	Frequency	Percentage	Frequency	Percentage
Age (Year)				
18-24	3	9.4	12	12.6
25-31	5	15.6	20	21
32-38	10	31.3	40	42
39-45	6	18.7	16	17
46-52	8	25	7	7.4
Total	32	100	95	100
Min.	18		18	
Max.	52		52	
Mean.	37		34	
SE	2.53		0.78	
Experience of (Years)				
1-5	10	31.25	15	15.79
6-11	9	28.12	25	28.32
12-16	10	31.25	30	31.58
17-21	2	6.25	15	15.79
22-26	1	3.13	10	10.52
Total:	32	100	95	100
Minimum	1		1	
Maximum	26		20	
Mean	10		13	
SE	1.010		0.650	

Source: Field Survey 2016

Cost Component	QTY	Total Cost (N)	UNITCOST	% TVC	%TC
A.V Selling Price		66085.25			
Purchasing Price	17	54,556.88	600	2797.79	96.54
Haulage		250		12.82	0.44
Market levy		100		5.13	0.18
Storage		800		41	1.42
Packaging		300		15.38	0.53
Transport		350		17.95	0.62
Security		150		7.69	0.27
Total Variable Cost (TVC)		1,950			
Total Fixed Cost (TFC)		600			
Fixed Cost		200			
Depreciation Cost (DC)		2,550			
Total Cost (TC)		11,528.37			
Marketing Margin (MM)		9578.38			
Net Marketing Margin (NMM)		3.25			
Market Efficiency (ME)		1.16			
Return Per Naira Invested (RPI)					

Table: 2 Cost and Return analysis for wholesalers

Cost Component	QTY	Total Cost (N)	UNITCOST	% TVC	%TC
A.V Selling Price		11,313.78			
Purchasing Price	99	10,255.23	600	97.4	97.4
Haulage		70		25.9	0.66
Market levy		20		7.40	0.19
Storage		30		11	0.28
Packaging		40		14.8	0.38
Transport		100		37.0	0.95
Security		10		3.70	0.095
Total Variable Cost (TVC)		500			
Total Fixed Cost (TFC)		600			
Fixed Cost					
Depreciation Cost (DC)		200			
Total Cost (TC)		10,755.23			
Marketing Margin (MM)		1,058.55			
Net Marketing Margin (NMM)		558.55			
Market Efficiency (ME)		9.83			
Return Per Naira Invested (RPI)		1.05			

Table: 3 Costs and Returns for Retailers

Table 4 Problems of Fresh Catfish Wholesalers

Problem	Frequency	Percentage	Ranking
Inadequate Capital	13	40.63	1 st
High Cost of Transportation	11	28.13	2 nd
High Cost of Storage	5	21.86	3 rd
Whether Fluctuation	3	9.38	4 th
Total	32	100	

Source; Field Data 2016

Table 5: Problems of Fresh Catfish Retailers

Problem	Frequency	Percentage	Ranking
Poor Sales	47	49.47	1 st
Lost Due Deterioration	23	24.21	2 nd
Lack of Capital	15	15.79	3 rd
Transportation Cost	10	10.53	4 th
Total	95	100	

Source; Field Survey Data, 2016.

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