



MARKETING EFFICIENCY OF CATFISH IN OLUYOLE LOCAL GOVERNMENT AREA OF OYO STATE

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ABSTRACT

A resourceful marketing system makes both the producers and consumers better off. It is against this backdrop that this study seeks to understand the marketing efficiency of cat fish production in Oluyole Local Government Area of Oyo State. Multi-stage sampling procedure was used to select the respondents for this study. Primary data were obtained from 105 respondents with the aid of well structured questionnaire and analysed using descriptive statistics, Shepherd-Futeral model (to determine the marketing efficiency), farm budget model (to estimate the profitability) and regression analysis. The result showed that most of the respondents (72.4%) were male, larger percentage (59%) of the catfish marketers were within the age range of 31 – 40 years and about 49.5% were married. The marketing efficiency values for both wholesaler and retailer were 86.2% and 85.8% respectively which implies that catfish marketing in the study area is relatively efficient. The regression analysis result showed that gender ($P < 0.05$), education ($P < 0.05$), marital status ($P < 0.10$) and household size ($P < 0.10$) had significant influence on the efficiency of catfish marketing and inadequate finance was identified as the most serious constraint to catfish marketing. In conclusion, catfish marketing is a viable venture in the study area and as a result of this, young school leavers, women and unemployed youths should venture into the enterprise as a full time or part-time job.

Keywords : Catfish, marketing efficiency, cost and returns, Regression

Introduction

Agricultural production is the core of most economies especially developing economies such as Nigeria and one of its major components is marketing, since production is said to be incomplete until the commodity produced reaches the final consumer. Marketing efficiency is a measure of market performance and is defined as the movement of crops and livestock from the producers to consumers at the lowest cost, consistent with the provision of the services desired by consumers (Oladejo, 2016).

Fish farming and production, as part of the agricultural enterprise contributes significantly to the economy; creating employment opportunities in rural and urban

areas, serving as a viable source of protein nutrients in Nigerian households and improving national food security. The food and agricultural organization (FAO, 2012) reported that fish accounted for 16.6 percent of the world population's intake of animal protein and 6.5 percent of all proteins consumed in the year 2009. Fish culture is an efficient means of animal protein production. It provides essential nutrition for over one billion people, including at least 50 percent of animal protein for about 400 million people from the poorest countries (The World Bank Group, 2011). Globally, fish provides about 3.0 billion people with almost 20 percent of their intake of animal protein, and 4.3 billion people with about 15 percent of such protein



(FAO, 2012). Like any other animal product, 52% of fish meat is edible, easily digestible and contains low cholesterol level. Apart from utilization as food, fish are used in medicinal preparation (fish oils), in fashion industry, recreation (sport fishing) and other agricultural industries; fish meals, ornamental and decorations (Bolorunduro, 2004). Faced with increasing wealth, changing dietary patterns and urbanization, fish farming provides the key to meeting fish demand in the face of dwindling fish supply from captured sources. Fish farming is not just uniquely placed to reverse the declines in supplies experienced from capture fisheries but also has notable potentials for new livelihood opportunities, providing mechanism for lower priced fish, enhanced nutritional security and employment for poor communities (Jagger and Pender, 2001). Increasing demand for fish products has resulted in the growth of fish farms worldwide in order to meet a substantial part of the world's food requirement, (Olasunkanmi, 2012) this has brought about the need for a very resourceful marketing system.

A resourceful marketing system, according to Adegeye and Dittoh, (1985) makes both the producers and consumers better off, therefore, to ensure continuous availability of fish for human consumption, nutrition, and wellbeing, the Nigerian economy (and the global economy at large) requires an effective, efficient and a resourceful marketing systems. As a result of the foregoing, efficient fish marketing is important. Several studies have been conducted on marketing efficiency of catfish production, Ayanboye *et al.* (2015); factors determining the profitability of catfish production in Ibadan Oluwasola and Ige (2015), this study however, specifically, seeks to investigate the marketing efficiency of

catfish with a view to examine the effects of some socio-economic variables on marketing efficiency and identify challenges encountered in the catfish business, in the study area. The result of this study would provide the unemployed youth and women intending to participate in the catfish marketing the needed information regarding its economic viability.

Materials and Methods

The study area

The study was carried at Oluyole Local Government Area. The headquarters of the local government is located at Idi Ayunre. It has an area of 629 km². According to national bureau of statistics 2016, the population of the area was estimated to be 285, 900. It shares boundary with Ogun State through Obafemi Owode and Ijebu north Local Government Area. Prominent crops grown in that area include maize, yam, cassava, cocoyam, plantain and also catfish production and marketing is a viable and popular enterprise in the study area.

Method of Data Collection, Sampling Technique and Size

Primary data were used for the study and these were collected with the aid of well-structured questionnaires and interview guide which were used to elicit information from the respondents. Information such as socio – economic characteristics of the respondents, marketing efficiency of catfish, costs and returns information pertaining to catfish marketing and the challenges encountered in the catfish enterprise were collected.

Sampling procedure and sample size:

Multi-stage sampling technique was used to select the sample size of this study. The first stage involved the purposive selection of Oluyole Local Government Area of Oyo



State. This selection was borne out of the fact that there are many catfish producers and marketers in this location. The second stage involves random selection of six (6) out of ten (10) wards in Oluyole Local Government Area. These are: Orisunbare, Abanla / Olonde, Busogboro, Latunde, Ayegun and Idi-ayunre. The third stage involved the random selection of 21 respondents each from Busogbooro and Abanla/Olonde, 25 respondents from Orisunbare, 13 from Latunde and 20 respondents each from Ayegun and Idi –ayunre proportionately to sample size to make a total of 120 respondents. 45% of catfish marketers from the list provided by the catfish association in that area resulting in the selection of 20 respondents each from the selected major areas to make a total of one- twenty respondents (120) However, 105 questionnaires were finally retrieved from wholesalers and retailers of catfish in the study area and used for analysis

Analytical methods

A combination of different analytical tools such as descriptive statistics and regression analysis were employed to analyze the data for this study. Descriptive statistics such as means, frequency distribution and percentage was used to analyse the socio-economic characteristics of the respondents (such as age, sex, marital status) and challenges faced by catfish marketers. Shepherd-Futeral model was used to determine the marketing efficiency, farm budget model was used to estimate the profitability as used by Olaleye *et al.*, 2019 while multiple regression analysis was used to estimate statistical relationship between marketing efficiency and socio-economic characteristics of catfish marketers. Following Oluwasola and Ige, 2015, the implicit form of the regression model for this study is given as

$$Q = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, \dots, U)$$

where Q is the marketing efficiency measured in percentage,

X_1 = gender (male =1; otherwise =0)

X_2 = age (years)

X_3 = marital status (married =1; otherwise = 0)

X_4 =educational level (years of formal education)

X_5 = household size (number of persons in the household)

X_6 = major occupation (catfish marketing = 1, otherwise = 0)

U = error term.

Marketing efficiency

Shepherd - Futeral model (Marketing Efficiency):

$$ME = \frac{TC}{GI} \times 100 \dots \dots \dots i$$

Where;

ME = Marketing Efficiency of Fresh catfish

TC = Total cost incurred by marketers (purchase cost + marketing cost), GI = Gross Income of each marketer.

Gross Margin Analysisii

$$GM = TR - TVC$$

Where:

GM = Gross Margin (₦/Kg), TR = Total Revenue (₦/Kg), TVC = Total Variable Cost (₦/Kg).

Return on investment = net farm income / total cost..... (iii)

Results and Discussion

Socioeconomic Characteristics of the Respondents



Results in table 1 showed that most of the respondents (72.4%) were male while 27.6% were female. This confirms that there is domination of male gender in catfish marketing and this could be attributed to their abilities to withstand strenuous activities involved in catfish marketing. This result agrees with the findings of Oluwasola and Ige (2015) who reported that 80% of their respondents were male. The age distribution reveals that larger percentage of the catfish marketers (59%) were within the age range of 31 – 40 years followed by the distribution of respondents (30.5%) whose age group was = 30 years.

This implies that most of the catfish marketers were in their economic active age and have sufficient energy to carry out necessary task as regards catfish marketing. This aligns with the findings Abah *et al.* (2013) where about 70% of their respondents fell within the active age 21 – 40 years. The marital status distribution shows that 49.5% were married while others are separated, divorced, widowed and single. This indicates that married people will be involved in a productive activities due to socio-economic demand. This implies that married people made use of the opportunity the catfish provides as a viable source of livelihood and at the same time make rational marketing decisions that will enhance returns from the business since they may be relying

on the catfish enterprise to provide for their family members.

Furthermore, the distribution of the respondents by years spent in school reveals that 22% of the respondents spent less or equal to 6 years in school, 20% of the respondents spent between 7 and 12 years in school, 46% of the respondents between 13 and 18 years in school and very few (12%) of the respondents spent 19 years above in school. This indicates that there was a good literacy level among the respondents in the study area.

As regards the household size, most of the catfish farmers (56.2%) in the study area had household size that is less than or equal to 3, followed by 27% of the respondents whose household sizes were between 4 and 6 members. The mean household size was 3 members. This implies that majority of the respondents had moderately low household members. In other words, low household sizes helped to reduce the number of hired labour needed for catfish marketing. The distribution of respondents by religion revealed that 26% of the respondents were Christians while 74% were Muslims. This implies that the study area is mostly dominated by Muslims however catfish is consumed by the two religions. The majority of the respondents (47.6%) in the study area have between 6 and 10 years of experience in catfish marketing.

Table 1: Socioeconomic characteristics of the respondents

Variables	Frequency	Percentage
Gender		
Male	76	72.40
Female	29	27.60
Age		
<30	32	30.47
31 – 40	62	59.05
41 – 50	7	6.67
Above 50	4	3.81



Average = 33

Marital Status

Married	52	49.52
Separated	11	10.50
Divorced	4	3.80
Widowed	3	2.85
Single	35	33.33

Household Size

<3	59	56.19
4 – 6	28	26.67
7 – 8	18	17.14

Average = 3

Religion

Christianity	27	25.71
Islam	78	74.29

Years of Education

<6	23	21.90
7 – 12	21	20.00
13 – 18	48	45.70
Above 18	13	12.40

Average = 12

Years of experience

<5	26	24.8
6 – 10	32	30.5
Above 11	47	44.7

Average = 12

Source: field survey, 2019.

Cost and returns analysis of catfish marketing per kg in the study area.

Result in Table 2 showed the detailed analysis of costs incurred and the returns realized from the marketing of catfish in the study area. Two important parameters considered were marketing costs and revenue generated. Marketing costs are the costs incurred in carrying out marketing activities or functions as the product moves from the producer to the final consumer. 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 or levies. Revenue is the

product of the unit price of a product or commodity and quantity sold. Profit is made when total cost is deducted from total sales (revenue). Net profit is obtained by deducting gross revenue from total variable cost (TVC) while marketing margin is obtained by deducting gross revenue from catfish price (P / kg).

Results in table 2 showed that an average marketing cost of ₦1120.00 was incurred by the wholesaler to sell a kilogram of catfish while a revenue of ₦1300 was made. The net profit was ₦180 and at a return on investment of 1.16 per kilogram of catfish was recorded. It implies that on every ₦1 invested per kilogram of catfish, a profit of ₦0.16K was



made. Also, on the part of the retailer, an average marketing cost of ₦1330.00 was incurred in selling a kilogram of catfish with a gross revenue of ₦1550.00, a net profit of 220

and a return of investment of 1.16. This implies that on every ₦1 invested in marketing a kilogram of catfish by the retailer, a profit of ₦0.16K was made.

Table 2: Cost and return analysis of catfish per kg in the study area

Parameter	Wholesaler Value(naira)	Percentage	Retailer Value(naira)	Percentage
Fish	880	78.5	1000	75.2
Labour	50	4.5	90	6.7
Transportation	35	3.1	40	3.0
Storage/rent	105	9.4	120	9.0
Calling cost	15	1.3	30	2.3
Packaging	25	2.2	25	1.9
Tax / levy	10	1.0	25	1.9
Total variable cost	1120	100	1330	100
Gross revenue	1300		1550	
Marketing margin	420		550	
Net profit	180		220	
Return on investment	1.16		1.16	

Source : field survey, 2019.

Marketing Efficiency of Catfish

The marketing efficiency refers to the maximization of the ratio of output to the input used in marketing. As shown in the results below, a wholesaler got a kilogram of catfish at a rate of ₦880.00 from the producer, with a total marketing cost of ₦1120/kg and sold it for ₦1300/kg at a marketing efficiency of 86.2%. The marketing cost of ₦240/kg is the value added in getting the catfish from the producer to the wholesaler while the retailer got the supply of

a kilogram of catfish at a rate of ₦1000 from the wholesaler, with a total marketing cost of ₦1330, a selling price of ₦1550 and marketing efficiency of 85.8%. The marketing cost of ₦330 / kg is the cost of value added to the product in getting the catfish from the retailer to the final consumer. The difference in the marketing efficiency of wholesaler to that of retailer could be attributed to the fact that wholesaler enjoyed the economics of scale by buying at a reduced rate when bulk purchase is made.

Table 3: Marketing efficiency of catfish

Marketer	Supply price (₦ / kg)	Marketing cost (₦/kg)	Total cost (₦ /kg)	Selling price (₦ /kg)	Marketing efficiency(%)
Wholesale	880	240	1120	1300	86.1
Retail	1000	330	1330	1550	85.8

Source : field survey, 2019.



Challenges encountered in catfish marketing

The result in table 3 showed that all the respondents encountered one problem or the other in catfish marketing with the largest distribution being financial challenge (88.75%), followed by unstable market price (71.25%). Next to this was pest and disease

infestation which accounted for 66.36% while high cost of input accounted for 63.75%. Another problem stated by the respondents was low harvest (36.25%) and low demand for catfish (35%). This result is in consonance with the findings of Adebayo *et al.* (2015) who also identified inadequate finance as the most serious constraint to catfish marketing.

Table 4: Challenges encountered by catfish marketers

Constraints	Frequency	Percentage
Financial challenges	71	88.75
Unstable market price	57	71.25
Pest and disease infestation	53	66.25
High cost of input	51	63.25
Low harvest	29	36.25
Low demand for catfish	28	35.00

Source : field survey, 2019.

Effects of socio - economic characteristics on marketing efficiency

Respondents' gender had a direct relationship with marketing efficiency of catfish, significant at 10% level, implying that the participation of more men in catfish marketing leads to about 59% increase in the marketing efficiency of catfish in the study area. The coefficient obtained for gender was positive and significant at 10% level which indicates that there is probability of catfish marketing to be efficient among males as compared to their females counterparts.

The marital status of the respondents had positive relationship with marketing efficiency and it is significant at 1% level. This is a suggestion that a unit increase in the number of married people' participation in the catfish marketing leads to about 26.5% increase in the marketing efficiency of catfish in the study area. The coefficient obtained for marital status was positive and significant at 1% level. This implies that there is a

probability of catfish marketing to be efficient among married people compared to marketers who were singles, widow or divorced.

The coefficient for educational level of the respondents was positive and significant at 5% level, an indication that an increase in the educational level of the respondents had direct relationship with marketing efficiency. An increase in respondents' level of education leads to 1.42 increase in marketing efficiency of catfish in the study area. This negates the findings of Oluwasola and Ige, (2015) where educational level of the respondents was reported to have an inverse relationship with net income of catfish farmers in the study area,

The coefficient of household size was positive and significant at 5% level, showing that household size had a direct relationship with marketing efficiency of catfish production. This shows that a unit increase in household size leads to 2.02 increase in marketing efficiency of catfish in the study area. The



adjusted coefficient of determination (R^2) implied that 68% of the total variation in the marketing efficiency of catfish in Oluyole local government was explained by the

socioeconomic factors included in the model. The F- value 6.14 which is significant at 5% level indicates that most of the variables influenced the marketing efficiency of catfish.

Table 5: Regression analysis showing the relationship between selected respondents' socio economic characteristics and marketing efficiency

Variable	Coefficient	Standard error	T-values
Gender	0.5942	0.3565	1.6667*
Age	1.0060	1.3339	0.7542
Marital status	0.265	0.1052	2.519***
Education	1.4216	0.5807	2.448**
Household size	2.0213	0.8329	2.43**
Years of experience	0.073	0.1002	0.728

Adjusted $R^2 = 0.6894$

F value = 6.14* significant at 5* level

*, = 10% ,** = 5% significance levels

Conclusion

The study concludes that catfish marketers in the study area were in their active age, well educated and that catfish marketing is male dominated. The marketing efficiencies for both wholesaler and retailer of catfish were moderately efficient which shows that catfish marketing is efficient in the study area.

The major problem faced by catfish marketers was financial challenge as majority of the catfish marketers started the business with their personal savings. Household size, level of education, gender and marital status had a direct effect on the efficiency of catfish marketing in the study area.

Recommendation

Based on the findings of this study it is therefore recommended that catfish marketing is a viable venture in the study area and as a result of this, young school leavers, women and unemployed youths should venture into the enterprise as a full time or part-time job. Also, catfish marketers should be encouraged to form cooperative societies or group

contributions where they pull resources together to avert the problem of fund / capital inadequacies.

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