SOCIO-ECONOMIC DETERMINANTS OF CATFISH MARKETING AMONG WOMEN IN OGBARU LOCAL GOVERNMENT AREA OF ANAMBRA STATE.

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Abstract

This study was conceptualized to analyze the socio-economic determinants of catfish marketing among women in Ogbaru Local Government Area of Anambra State. A multistage sampling technique was employed in the selection of location and respondents. The data were collected from 100 catfish women marketers, the primary instrument used for data collection was structured questionnaire. The data were analyzed using descriptive statistics, gross margin and a 5-point likert scale. The farmers had an average total cost of ₦ 410,750 and made average total revenue of ₦ 568,300. The gross margin realized from the marketing activities were ₦ 314,500. The constraints faced by catfish women marketers include; poor transportation, inadequate infrastructure, inadequate extension service, unsteady market prices and lack of finance. The study recommended that financial institutions and cooperative societies should make loans more available to women catfish marketers, catfish marketers should be encouraged to form and manage functional cooperatives as a way to pool their resources for individual development within the catfish marketing industry.

Key Words: *Socioeconomic, Determinant, Catfish, Marketing, Small Holder, women*

Introduction

In Nigeria fish accounts for a high proportion of animal protein intake of the population (Ekerete & Asa, 2014). Catfish provide at least 40% of dietary animal protein of people living in the developing world. Fish also supply highly digestible protein and is a rich source of minerals, fatty acids and water soluble vitamins Njoku & Offor (2016). The high value of nutrition in fish is particularly important for lower income groups that might otherwise depend on a cereal-based food to meet their dietary needs. Cereal grains are usually low in lysine and sulphur-containing amino acids; so by supplementing their diets with fish significantly raises the biological value of the diet. According to (FAO 2016), fishery products like many other animal products contain nitrogenous compounds, lipids, carbohydrates, minerals and vitamins. A distribution channels can be defined as a sequence of markets or discrete exchanges which a given product passes through under the supervision and control of middlemen from the production location to the final consumer. Four major channels of distribution were identified in reference to developed economies, from producer to consumer, from producer to one middleman, from producer to wholesaler and retail to consumer Njoku & Offor (2016). This are the traditional marketing channel of distribution for consumer goods. The shorter a marketing channel, the more efficient the marketing activities and profit maximization. A marketer selects a channel of distribution which seems to yield the highest possible net profit on his sales (Isibor 2014). Under imperfect market competition pricing decision by firms are based on cost orientation pricing, demand oriented and

competition oriented pricing. Consequently, prices of catfish changes as it passes through the middlemen, and becomes expensive when it gets to the consumers (Eniola, 2019). Federal Ministry of Agriculture and Rural Development (FMARD, 2016) reported that the middlemen performing the role of marketing are being accused of earning higher profits in the marketing system. Women plays a vital role in the marketing of catfish, and they make use of convenient channels to distribute. As the fishermen approach their landing sites, women catfish marketers come around to purchase these fishes (Eniola, 2019). Marketing and distribution channels are important characteristics in the process of getting produce from source to consumers. Federal Ministry of Agriculture and Rural Development (FMARD, 2016) categorized marketing channels into centralized and decentralized channels. Centralized channels deals with agents who serve as middlemen between producers and consumers while decentralized is a kind of channel where both consumers and agents can buy directly from the producers (Okpeke & Akarue, 2015).

Statement of the Problem

In spite of the increasing growth by other major sources of animal protein such as livestock and poultry industries, the problem of protein deficiency has continued unabated due to the current level of production in the country (Eniola, 2019). Fish constitutes about 41% of the total animal protein intake by the average Nigerian, hence there is a great demand for fish in the country (Federal Ministry of Agriculture & Rural Development, 2011). Fish is important as food, fish oil, fish skin and leather, fish meal and fish manure, medicine and disease control. Catfish production enhance the economy of Nigeria as it serves as a source of income, reduces the rate of unemployment (Emmanuel and Omotoriogun, 2010). Several studies have been carried out on catfih production and marketing, a few of these, Ansa, (2014) examined the challenges and production process of catfish hatcheries in the Niger Delta region of Nigeria. He reported that the major constraints faced by catfish farmers were poor access to credit majority. Adeyemo, Ganiyu and Olugasa (2013) examined comparative evaluation of productivity and cost effectiveness of Catfish fingerling production in Earthen Pond and Recirculation System in Ibadan, Oyo State. They stated that the cost of production is high with increased yield. Akinpelu, Ayeloja, George, Adebisi, Jimoh and Idowu (2013) carried out gender analysis of processing activities among commercial catfish processors within Ibadan Metropolis They reported that majority (78.45%) were women and was a profitable venture. Despite all these studies in catfish production none of these studies have been able to establish the fact that catfish marketing among women are profitable in Ogbaru Local Government Area of Anambra State. It is this gap that this study seeks to fill by focusing on the economic analysis of catfish marketing in Ogbaru Local Government Area. It therefore becomes imperative to carry out this research with a view to producing answers to the following research questions:

i. What are the marketing channels of catfish women marketers in the study area?

ii. What are the profitability of catfish marketing?
iii. What are the constraints faced by the catfish women marketers?

Research Objectives

The broad objective of this study was to analyze the socio-economic determinants of Catfish Marketing among Women in Ogbaru Local Government Area of Anambra State.

The specific objectives were to;

i. identify the marketing channels of catfish women marketers
ii. estimate the profitability of catfish marketing
iii. identify the constraints faced by the catfish women marketers in the study area.

Literature Review

Concept of Marketing

The demand for fish and fish products is far less than its supply. Almost everybody eats fish either dried or fresh, compared to other products such as pork and beef that are being affected by religious and medical constraints, respectively (Njoku & Offor, 2016). Fish has Omega-3 Fatty Acids, which is highly essential to the body and it can be sold to people of every kind in hotels, churches, at conferences, meetings, banks, individual door-to-door delivery and so on. The goal of every fish marketer is to make profit, and a proper investigation is needed to ascertain the level of demand for catfish in the area. Catfish marketers are free to locate a good and standard market elsewhere other than their immediate environment. Market survey must be carried out in their proposed markets, to enable them find out the market price of an average catfish, the level of demand and the time of the year catfish are sold most. There is need to have a ready market for catfish in order to promote efficiency and maximize profits. Therefore, catfish can be sold everywhere, such as hotels, restaurants, schools, hospitals and so on (Onyekuru., Ihemezie & Chima ,2019). Fish is not a durable product that can be stored for a short period of time when properly dried and also can only be sold as fresh livestock. If you are not having a ready market, you may be forced to keep many grown up fishes and the process of making profits will be minimized. When kept alive the marketer will still be feeding them while they should have been sold, at the process reducing the estimated profit. When the fishes may grow to a point where the environment will be too crowded for them, there may be expectation of some disease outbreak. Thus, researching properly about the market in your environment before investing into the catfish marketing is very necessary (Onyekuru, Ihemezie & Chima, (2019).

Concepts of Catfish Marketing Channels

A distribution channels can be defined as a sequence of markets or discrete exchanges which a given product passes through under the supervision and control of middlemen from the production location to the final consumer (Alawode, Oluwatayo, Adebowale, 2016). Four major channels of distribution were identified in reference to developed economies

• From producer to consumer
• From producer to one middleman

• From producer to wholesaler to retail to consumer (This is the traditional marketing channel of distribution for consumer goods). The shorter a marketing channel, the more the efficient is the marketing, profit maximization, a producer or trader selects that channel of distribution which promise to yield the highest possible net profit on his sales (Isibor, 2014). As output increases along the distance between the producer and the final consumer, more level will usually be added to the system (of distribution) and additional intermediaries become the choice to select. The distribution path must ensure the availability of product at the purchase point, utilized by farmer's price determination under perfect market at wholesale level by reference to general level of prices in the market; and through the market forces of demand and supply. At retail level, bargaining is the most popular social principle in setting market price. Under imperfect market competition pricing decision by firms are based on cost orientation pricing, demand oriented and competition-oriented pricing. Fish marketing does not usually involve the fishermen and consumers only but there are other players in the fish distribution channels especially middlemen. Consequently, prices of fish change as it passes through these middlemen such that by the time it reaches consumers, it becomes expensive (Alawode and Jinad, 2014). The middlemen performing the role of marketing are being accused of earning higher profits in the marketing system. As the fishermen approach their landing sites, fish marketers come around to purchase the fish, though the number of intermediaries or middle men which ranges from one to three. Marketing and distribution channels are important characteristics in the process of getting produce from source to consumers. (Isibor, 2014) categorized marketing channels into centralized and decentralized channels. Centralized channels deal with agents who serve as middlemen between producers and consumers while decentralized is a kind of channel where both consumers and agents can buy directly from the producers. Fish distribution channel is common to must developing countries with series of middlemen between producers and consumers.

Concept of Catfish Channel

Catfish is the "king" of aquaculture in terms of pounds produced and total value. The majority of catfish production occurs in the river, lake, dams. Ponds and so on. This southern delicacy is raised in earthen ponds filled with well water and fed a floating, grain-based diet. Catfish has a mild flavor and is high in protein and low in calories (Njoku & Offor, 2016). According to the National Statistics Service, 471,683,000 pounds of U.S. farm-raised catfish were processed in 2010. Farmers received an average price of $0.861 per pound. Additional catfish were processed locally or sold for pond stocking and pay lakes (fee fishing operations). The most commonly cultured species is the channel catfish, *Ictalurus punctatus*, although a hybrid between the channel catfish and the blue catfish, *Ictalurusfurcatus*, is growing in

popularity. Channel catfish are a warm water species with an optimal temperature for growth of 85°F (29°C). In the wild, catfish are omnivores, feeding on a wide variety of animal and plant materials. In culture ponds, fish are fed a complete diet, typically composed of soybean meal and other seed or grain products, with only a small amount of animal protein (Njoku & Offor, 2016).

Concept Catfish fingerlings

Most catfish production occurs in earthen ponds, typically 5 to 10 acres in size, with relatively small numbers produced in cages and raceways. A new production system developed in Nigeria has split-pond system, and shown to improve yields. Farmers are beginning to add these systems to their farms. Most catfish are raised in multiple-batch production. Small catfish (fingerlings) are typically stocked each spring and market-sized fish removed periodically by seining. Ponds are left for production for years without draining, as wastes are removed through natural processes within the ponds. In single-batch production, fingerling catfish are stocked and grown until almost all of the fish have reached market size, then the entire pond of fish is harvested at once, and then the pond is re-stocked (Oyibo, et al,. 2020). In catfish feed production, the ground feed ingredients are mixed and sent through an extruder, resulting in feed pellets that float. To feed catfish, farmers use a truck or trailer-mounted hopper with a blower that shoots the feed pellets over the water surface. Thus, the fish feeding response is easily monitored to ensure that fish get fed enough but not too much. Dissolved oxygen concentrations in catfish ponds will decline over the night during the growing season, and farmers use aerators (typically electric paddlewheels) to increase oxygen levels in the water (Onyekuru, Ihemezie & Chima ,2019). Nigeria catfish production had declined in recent years, in part due to competition from *Pangasius* species of catfish (all catfish are within the order *Siluriformes*), imported from Vietnam and sold in the market. Some channel catfish fillets are also from Delta, Bayalsa, Cross River and River State. Tilapia products also appear to compete with catfish in certain markets. High feed prices also increased the costs of production, especially since feed is a major operating cost. Recent increases in prices paid to farmers for catfish have made catfish culture profitable again, and farmers are increasing production to fill a shortage of U.S.

Materials and Methods

The Study Area

The study was carried out in Ogbaru Local Government Area of Anambra State, Nigeria. Ogbaru local government area is one out of the 21 local government areas of Anambra State. Anambra State is one of the 36 States in Nigeria, it is located in the South-Eastern part of the country. The State is sub-divided into four agricultural zones to aid planning and rural development. Ogbaru is a humid (230) tropical rain forest zone, it is located between longitude 6° 45' 1" E and latitude 6° 1' 53" N. has a boundary with Asaba in Delta State and Ndoni in River State. (www.anambrastate.govt.ng 2015) Ogbaru is located by the bank of River Niger.

Ogbaru people are mainly fishermen and women fish marketers. The people in the area are traditionally known as warriors. The LGA has 16 communities which include: Atani, Akili-Ogidi, Akili-Ozizor, Amiyi, Mputu, Obeagwe, Ohita, Odekpe, Ogbakugba, Ochuche-Umuodu, Ossamala, Ogwu-Aniocha, Umunankwo, Umuzu, Okpoko and Ogwu-Ikpele. Atani is the LGA headquarter. Ogbaru is neighbored by Onitsha, a major commercial city in Southeast Nigeria and that gives Ogbaru people quick access to the market. (www.anambrastate.govt.ng.2012).

Population of the Study

The population of the Study include all the registered women catfish marketers in Ogbaru Local Government Area (LGA) of Anambra state.

Sampling Procedure / Technique

Two stage sampling techniques was used in selection of the women catfish marketers. In stage 1, five communities were purposively selected, which were, Obeagwe, Ogbaru, Umuzu, Amiyi and Ohita based on prior knowledge of their active engagement in catfish marketing.

In stage 2, twenty (20) women catfish marketers were randomly selected from each of the (5) selected communities giving a total of (100) respondents were used for the study.

Method of data Collection

Data for the study was collected through primary and secondary source. The primary source would be through the use of structured questionnaires.

Validity and Reliability of instrument for Data collection

To ascertain the Validity of the instruments, the initial drafts were given to three lectures from the faculty of agriculture for face and content validity. The Cronbach's Alpha correlation technique was used to ascertain the reliability of the instrument.

Data Analysis

Descriptive statistic was employed to describe objective (i), Gross Margin Analysis was used to analyze objective (ii) and Likert scale rating technique was used for objective (iii).

Mathematical Expression/Model Specification

Enterprise Budget Analysis Model

NP = (TR – TVC) – TFC

Where;

NP = Net Income or Net Returns in Naira (₦)
TR = Total Revenue in Naira (₦)
TVC = Total Variable Cost in Naira (₦)
TR –TVC = Gross Margin in Naira (₦)
TFC = Total Fixed Cost

Likert scale rating technique

A likert scale is a psychometric scale in survey research. When responding to a likert questionnaire item, respondents specify their levels of agreement or disagreement on a symmetric agree - disagree scale for a series of item statement. The scale captures intensity of their feelings. A 4 - point rating scale was employed in this study. This was regarded as strongly agree (SA), agree (A), disagree (DA), and strongly disagree (SD), with corresponding values of 4, 3, 2, and 1 respectively. The mean score (MS) of the respondents based on the 4-point rating scale was computed as = 2.50 cut off point. Based on this, any score below 2.50 (MS<2.50) was taken as a weak factor and may not be considered while those with mean score of above 2.50 (MS>2.50) were taken as strong factors and thus be considered.

Results and Discussion

Table1: The marketing channels of catfish in the study area.

Variable	Frequency	Percentage	$\bar{X}$
What is your position in the market?			
Producer/Supplier	25	22.5	
Wholesaler	67	60.4	
Retailer	8	7.2	1.83
How much do you sell a table size fish?			
900-1200	30	27.0	
Above 1500	70	63.1	2.70
Who do you sell to?			
Retailer	72	64.9	
Consumer	28	25.2	2.28
What quantity of catfish do you buy?			
1000-2000	50	45.0	
3000-4000	44	39.6	
Above 5000	6	5.4	1.56
What quantity of matured catfish do you sell weekly?			
100-150	38	33.20	
151-200	44	39.60	
201-250	18	16.20	167.00
How often do you buy catfish?			
Weekly	20	18.0	
Monthly	80	72.1	2.80

How often do you buy catfish preservatives?			
Daily	14	12.6	
Weekly	32	28.8	
Fortnight/every two weeks	54	48.6	2.40
What means of transportation do you use to convey fish to the market?			
Wheelbarrow	11	9.9	
Keke	26	23.4	
Bus	63	56.8	4.15

Source: Field survey 2022

Most of the catfish marketers were wholesalers, who buy at least 1000 pieces of catfish and sell them to retailers at a minimum price of 900 naira each. At least, 100 matured catfish are sold monthly and their preservatives are being replenished at intervals of two weeks. Bus is the most rampant means of transportation of conveying fishes to the market. This report is in line with the survey of Isibor (2014), who reported that catfish marketers are dominated with wholesaler.

Table 2. Profitability of Catfish marketing

Item	Average value (₦)	Percentage of Variable cost
A) Total Revenue	**568,300**	
B) Variable Cost		
Cost of transportation	117,270	43.32
Cost of preservatives	48,000	19.74
Labour	42,500	14.47
Cost of communica.	31,600	10.75
Miscellaneous (water, (electricity)	14,430	11.72
Total Variable Cost	**253,800**	
C) Fixed Cost		
Storage facility	132,400	
oven	21,800	
Plastics	2,750	
Total Fixed Cost	156,950	
Gross margin	274,500	
Net farm income	102,550	
Return on investment	0.52	

Source: field survey, 2022

Profitability Analysis of catfish farming

The result of the cost and returns in catfish marketing in (Table 2) estimated average costs and returns per marketing cycle of women catfish marketers in the study area. The result showed that the total variable costs incurred was ₦253,800; the total fixed cost was ₦156,950 per marketing cycle, the total cost was ₦ 410,750. The gross margin per marketing cycle was ₦ 314,500 and the estimated net farm income was ₦ 157,550. The return on investment was 0.52, this indicated that catfish marketing in ogbaru local government Area were profitable and seen as a good business venture. This result is in line with the report of Ume, et al., (2016) who opined that the gross margin of catfish marketers was ₦322,600 with profit of ₦153,100. Therefore, catfish marketing is profitable and should be giving priority in the study area. Also, the results showed that for every naira invested, a profit margin of ₦0.52K was realized. This study is in line with the report of Ashley-Dejo, Olaoye & Adelaja (2017) who stated that catfish marketing is a profitable venture.

Table 3: The constraints facing catfish farmers in the study area.

S/N	Items	N	$\bar{X}$	Std. Deviation	Decision
1.	Unorganized market	100	2.36	.77	Reject
2.	Price instability	100	2.21	.81	Reject
3.	Poor storage facility	100	4.05	.73	Accept
4.	Poor electricity for drying	100	2.22	.58	Reject
5.	Cost of communication	100	3.56	.83	Accept
6.	Bad road	100	3.79	.66	Accept
7.	Inadequate extension service	100	3.82	.69	Accept
8.	Weak marketing channels	100	3.82	.52	Accept
9.	Poor transportation	100	2.14	.62	Reject
10.	Inadequate capital	100	3.98	.47	Accept
	Grand $\bar{X}$	100	3.20		

Source: Field survey 2022

Constraints faced by women catfish

Marketers

Women catfish marketers encountered many constraints and they include inadequate capital, price instability, poor storage facility, poor electricity for drying, high cost of communication, bad road, Inadequate extension service, weak marketing channels, poor transportation and unorganized market. The results presented in (Table.3) showed that poor storage facility (4.05%) was indicated by the women marketers as the most serious constraint to them. The second constraints were insufficient capital (3.98%), catfish marketing is capital intensive and thus requires big capital investment for reasonable profit. Another serious constraint was inadequate extension service (3.82%) that will guide the marketers on the best storage facility to adopt. This could be a result of the poor motivation given to the extension agents by

the government. There have been series of complaints coming from marketers on not getting adequate extension service from the government either at the State or local government level. This is in line with the study of Ugwumba and Nnabuife (2010) who reported poor storage facility as serious setback to profits realizable from catfish marketing.

Conclusion

The study investigated the Socio-economic determinants of Catfish Marketing Among Women in Ogbaru Local Government Area of Anambra State. The analysis of data collected revealed the following;

The result showed that the total variable costs incurred was ₦253,800; the total fixed cost was ₦156,950 per marketing cycle, the total cost was ₦ 410,750. The gross margin per marketing cycle was ₦ 314,500 and the estimated net farm income was ₦ 157,550. The return on investment was 0.52, and revealed that catfish marketing is a very profitable business.

The result showed that most women catfish marketers are wholesalers, who buy at least 1000 pieces of catfish and sell them to retailers at a minimum price of 900 each. At least, 100 matured catfish are sold monthly and their feed is being replenished at intervals of two weeks. Buses were the most rampant means of transportation of fishes to the market. This shows that there is high returns or profit in catfish production. Women catfish marketers encountered many constraints and they include inadequate capital, price instability, poor storage facility, poor electricity for drying, cost of communication, bad road, inadequate extension service, weak marketing channels, poor transportation and inadequate capital.

Recommendations

i. Association of women catfish marketers should regulate the market price by maintaining a standard.
ii. Women catfish marketers should be encouraged to form and manage functional cooperatives as a way to pool their resources for individual development within the fish marketing industry.

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