

# Survey of Processed Fish Products Sold in Oyo State, South West Nigeria

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## Research Article

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### ABSTRACT

The study reveals the survey of processed fish products, in Oyo state south west Nigeria. A multistage sampling technique was used to select 150 respondents from 9 wards within Oyo state and information on socio-economic characteristics of the respondents, the types of processed fish products available in Oyo State, the marketing channels of processed fish in Oyo State and marketing efficiency of fish products were obtained using semi-structured questionnaire. Data were analyzed using descriptive statistics and budgetary technique. This study revealed that 74% of the respondents fall within the age group of 50 years or less, all the respondents in the study area were female. Also, whole smoked fish was the most available processed fish product (78.7%) while canned fish and fish cracker were least available (2% and 0.7% respectively) fish products in the study area. It was also established that engaging in the sales of processed fish products is highly profitable with the profit margin of 42.14% and marketing efficiency of 1.35. It is therefore recommended that fish processors and entrepreneurs should tap into these scarce products to improve their income generation.

## INTRODUCTION

Fish consumption in Nigeria is at 12.5 kg/Capita/year and still lower than world average of 18.4 kg/capita/year in 2009 increasing with population growth <sup>[1]</sup>. Fish and fishery products are highly nutritious, contain high percentage of animal protein with other nutrient such as minerals like calcium, phosphorus and iron, vitamins A, B, E and K <sup>[2,3]</sup>. However, fish is highly perishable product, therefore the need to develop and improve fish appropriate handling and processing technique which will enable maximal production of value added products so as to increase profitability and reduce postharvest losses <sup>[4,5]</sup>. In Nigeria, consumers prefer to eat fish in different forms, in both rural and urban areas, consumers prefer fresh fish and those who live near the major water bodies and rivers consume fish in any form either in fresh form or processed form <sup>[6-8]</sup> but the current delivery system limits the quality and quantity of fish products that people consume <sup>[9]</sup> necessitating the need to critically study fish marketing channel in Nigeria so as to provide the information to appropriate policy makers in order to improve on it. In an effort to contribute towards addressing the issue of limited information on fish products availability in the market, this study was conducted so as to describe socio-economic characteristics of processed fish mongers in the study area, identify the types of processed fish products available, identify the marketing channels of processed fish products in the study area, determine the marketing margins of processed fish products that is sold as well as estimate the marketing efficiency of processed fish products sold in Oyo State South West Nigeria.

## METHODOLOGY

### Study area

The study was carried out in Oyo state, Nigeria. The study area has heterogeneous population of Yoruba, Igbo and Hausa. Oyo state is located in the south west geopolitical zone of Nigeria. Oyo state consist of 33 local government areas which are Akinyele, Afijio, Egbeda, Ibadan north east, Ibadan north west, Ibadan south east, Ibadan south west, Ibarapa central, Ibarapa east, Ibarapa north, Ido, Irepo, Iseyin, Kajola, Lagelu, Ogbomosho south, Oyo west, Oyo east, Atiba, Atigbo, Saki west, Saki east, Itesiwaju, Iwajowa, Olorunsogo, Oluyole, Ogo – oluwa, Surulere, Ori ire and Onaara. The state covers a total of 27,249 square kilometers of land mass and it is bounded in the south by Ogun state, in the north by Kwara state, in the west partly by Ogun state and partly by Benin republic, and in the east by Osun state. The state has four political zone namely- Saki, Ogbomosho, Oyo, and Ibadan/ibarapa out of which one zone were studied which was Ibadan/Ibarapa. The study population comprises of different fish species processors in Oyo state metropolis. Primary data were collected with the use of semi-structured questionnaire.

### Sampling technique and sample size

Primary data were collected for this study; multistage sampling techniques were employed in the selection of respondent. The first stage involved the selection of three (3) local government areas out of the thirty three (33) local government areas of Oyo state using 10 simple random technique. The local government visited includes, Egbeda, Ido, Ibarapa East. The second stage involved the selection of three (3) wards under each local government selected, which give the total sum of nine (9) wards. Five (5) communities under each wards were selected using simple random technique which give the total sum of fifteen (15) communities. The third stage involved the selection of 10 processed fish mongers from each community selected using simple random techniques which makes the total sum of 150 respondents which was used as the sample size.

### Data analysis

The data were analyzed using appropriate statistical tools. The personal characteristics data were analysed using percentage and frequency counts while the types of processed fish product were analyzed using descriptive and chart. The marketing channels were analyzed using smart art chart. The marketing margin and efficiency were analyzed using budgetary techniques.

## RESULTS AND DISCUSSION

### Socio-economic characteristics of respondents

This study revealed that 74% of the respondents fall within the age group of 50 years or less (**Table 1**) as 42% of the respondents were in the age range 41-50 years and 32% of the respondents were between 31-40 years. Also, all the respondents were female, this in line with opinion of many researchers like Ayeloja et al. [3]; Rosemond and James [10]; Nwabueze [11] and Yisa et al. [6] where it was stated that fish marketing is mainly dominated by women. Over eighty seven percent (87.3%) of the respondents in the study area were married, 8% were divorced and 4.7 were widow. This indicates that married people look for more ways of making money to cater for their families. In terms of experience, 40.7% of the fish marketers had 11-20 years of experience and 36.7% had 21-30 years. The mean experience was 22 years. This shows that the fish marketers were not new in the business and it has been argued that more experienced marketers could predict the future outcome of sales with some probability by considering performance of past years. Also, **Table 1** reveals that majority (86%) of the respondents had no formal education while 14% had only secondary education. More than half (52%) were Muslim, 45.3% were Christian and 2.7 were pagans. Approximately 55% of the respondents in the study area had household size between 5-6 members, 27.33% between 3-4 members while 8% had 1-2 members. More than 90% of the respondents engaged in the enterprise as a secondary occupation while less than 10% took it as major occupation. These results are similar to that obtained by Ayeloja et al. [12] which shows that fish marketing enterprise allows mongers to engage in other source income.

**Table 1.** Socio-economic characteristics of respondents.

Variable	Frequency	%
<b>Age</b>		
21-30	5	3.3
31-40	48	32
41-50	63	42
51-60	24	16
61-70	10	6.7
Total	150	100

Mean	44	
<b>Sex</b>		
Male	-	-
Female	150	100
Total	150	100
<b>Marital status</b>		
Single	-	-
Married	131	87.3
Divorced	12	8
Widow	7	4.7
Total	150	100
<b>Experience</b>		
1-10	17	11.3
11-20	61	40.7
21-30	55	36.7
31-40	15	10
41-50	2	1.3
Total	150	100
Mean	22	
<b>Education</b>		
No formal	129	86
Primary	-	-
Secondary	21	14
Total	150	100
<b>Religion</b>		
Islam	78	52
Christianity	68	45.3
Traditional	4	2.7
Total	100	100
<b>Household size</b>		
1-2	12	8
3-4	41	27.33
5-6	83	55.33
7-8	14	9.33
Total	150	100
Mean	5	
<b>Primary occupation</b>		
Fish farming	-	-
Fish processing	136	90.7
Fish marketing	13	8.7
Others	1	0.7
Total	150	100
<b>Secondary occupation</b>		
Fish farming	1	0.7
Fish processing	2	1.3
Fish marketing	147	98
Others	-	-
Total	150	100

Source: Field Survey, 2016.

### Types of processed fish products marketed in Oyo state

The types of processed fish marketed in Oyo state (**Table 2**) reveals that whole smoked fish was the most available processed fish product (78.7%) followed by chunked smoked fish (46%) and fried fish (42%) respectively. However, canned fish and fish cracker were rarely available (2% and 0.7% respectively) in the study area (**Figure 1**).

**Table 2.** Types of processed fish products marketed in Oyo state.

Fish Type	Available	Not available
Fried fish	63(42%)	87(58%)
Whole smoked fish	118(78.7%)	32(21.3%)
Chunked smoked fish	69(46%)	81(54%)

Sundried fish	-	150(100%)
Canned fish	3(2%)	147(98%)
Oven dried fish	-	150(100%)
Minced fish	-	150(100%)
Fish fillet	-	150(100%)
Fish finger	-	150(100%)
Fish cake	-	150(100%)
Fish cracker	1(0.7%)	149(99.3%)

Source: Field Survey, 2016.

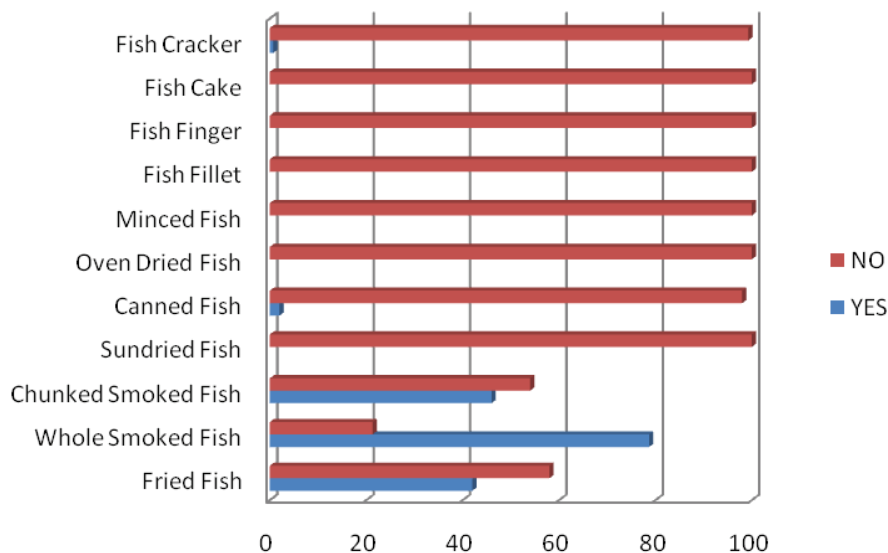


Figure 1. Types of processed fish products marketed in Oyo state.

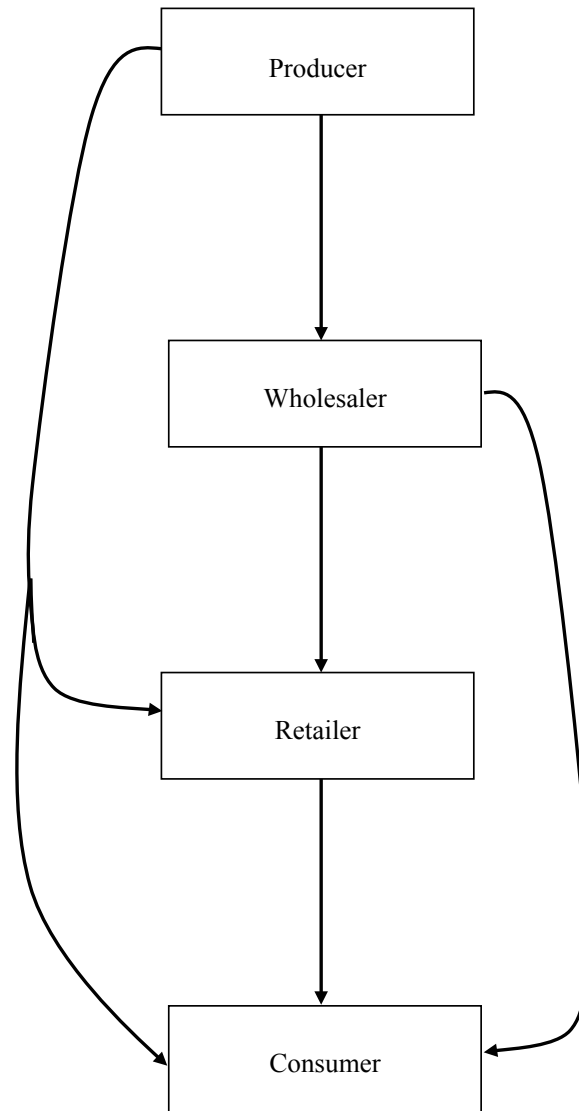
**Marketing channels of processed fish products in Oyo state**

The marketing channels of processed fish products in Oyo state (Table 3) indicates that most of the processed fish marketed were sourced from producer (88.7%) followed by wholesaler (10.0%), this is due to the fact that sourcing from producers is considered the cheapest when compared to others. However, most of the processed fish products marketed were sold directly to consumers because it is believed that selling directly to consumer’s commands higher price compared to other and at the same time higher marketing margin. The marketing channel of processed fish products in Oyo state which is presented on Figure 2 indicates that fish marketing channel in the study area is similar to the marketing channel for any commodity of similar nature of the market organization as reported by Esiobu et al. The result shows that the marketing channel for processed fish products is a clear and a concise one. It reveals that there are at least three product flow channel. The products move from the producers/fishermen through the wholesalers, retailers and to the final consumer. It may also by-pass the wholesaler and producers sell directly to the retailers or consumers. However, another product flow channel in Figure 2 is the movement from the producer/fishermen to wholesalers directly to the final consumers, bypassing retailers. Ultimately, the marketing channel for processed fish products involves two categories of middlemen, namely, the wholesaler and the retailers. In consideration of the fact that producers are very far from the consumers, the functions of the middlemen in making the commodity available to the consumers becomes necessary. The percentage contribution of each player in fish marketing chain as presented in Figure 3 indicates that retailers play very vital role in marketing fish products in the study area [13].

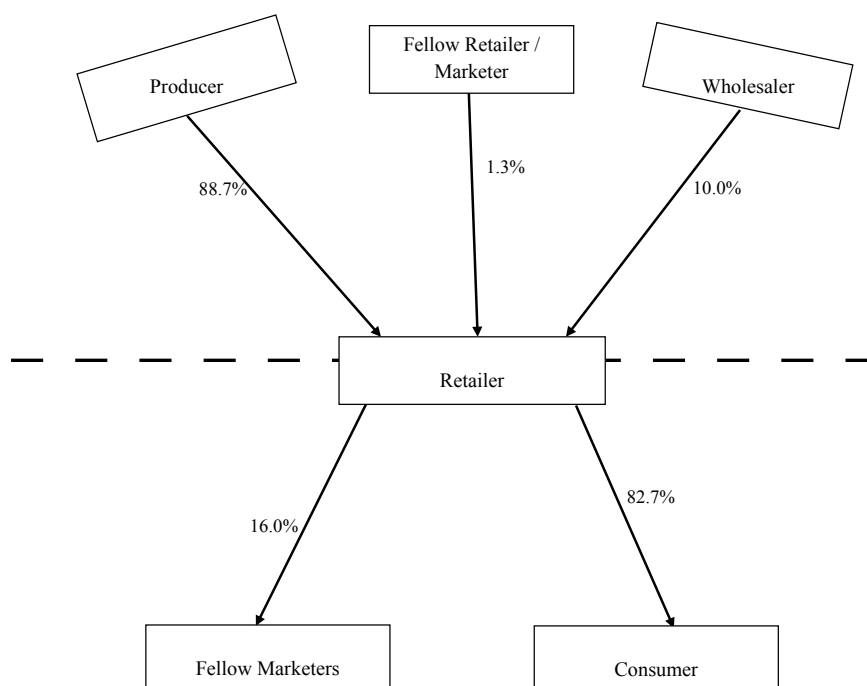
Table 3. Marketing channels of processed fish products in Oyo state.

Variable	Frequency	%
<b>Source</b>		
Producer	133	88.7
Wholesaler	15	10
Retailer	2	1.3
Total	150	100
<b>Target customer</b>		
Wholesaler	2	1.3
Retailer	24	16
Consumer	124	82.7
Total	150	100

Source: Field Survey, 2016.



**Figure 2.** Marketing channels of processed fish products in Oyo State.



**Figure 3.** Percentage contribution of market players in fish marketing Oyo State.

## DETERMINATION OF MARKETING MARGIN AND MARKETING EFFICIENCY

The budgetary technique which involves the cost and return analysis was used to determine the Marketing Margin (MM) and the Marketing Efficiency (ME) of the respondents. The model specification is given as:

$$MM = (SP - PP) / SP \times 100 \dots\dots\dots (1)$$

$$ME = SP / TC \dots\dots\dots (2)$$

Where: SP = Sales price (N) (Price/unit multiplied by the quantity sold); PP= Purchase price

TC = Total Cost (N) (consists of the cost of purchase in naira, rent, transportation, package, labour, market level etc.); MM = Marketing Margin (N) (which is the indicator of profitability) and ME = Marketing efficiency (N). **Table 4** thus, presents the results of the overall marketing margin and marketing efficiency of processed fish products’ marketers under analysis. The marketing margin was used as the indicator for profitability as well as market performance. The average net marketing margin (profitability indicator) for the processed fish products’ marketers per week was N5, 184. This shows that the average net marketing margin per month could be as high as N 20,736.92. The marketing efficiency was above one (1.35), indicating that the system of marketing ceteris paribus would accrue more margins as the total revenue increased, thus showing that the market was efficient irrespective of the associated marketing costs.

**Table 4.** Marketing margin and efficiency of processed fish products in Oyo state.

Items	Average Cost (N)	Percentage (%)
<b>Marketing Cost</b>		
Transportation	300	8.99
Labour	1323.33	39.67
Shop rent	401.67	12.04
Packaging	700.77	21.01
Association due	497.33	14.91
Tax	112.67	3.38
Total marketing Cost	3335.77	100
<b>Marketing Margin</b>		<b>42.14</b>
Purchase price	11700	
Sales price	20220	
Gross margin	8520	
Net margin	5184.23	
<b>Marketing efficiency</b>		<b>1.35</b>

Source: Field Survey, 2016.

## CONCLUSION AND RECOMMENDATION

This study revealed that 74% of the respondents fall within the age group of 50 years or less while all the respondents were female indicating that marketing of fish and fish products is dominated by female. The study also revealed that whole smoked fish was the most available processed fish product (78.7%) among processed fish marketed in Oyo state and most consumers get them directly from the producers. The study also indicated that engaging in the sales of processed fish products is highly profitable with the profit margin of 42.14% and marketing efficiency of 1.35 indicating that marketing fish products ceteris paribus would accrue more profit margins as the total revenue increased, thus showing that the market was efficient irrespective of the associated marketing costs. The result also indicates that fish products were highly acceptable as food products and they were bought by both male and female in the market. This study identified scarce products in the market viz a viz canned fish and fish cracker were rarely available (2% and 0.7% respectively) in the study area. Fish processors and entrepreneurs can therefore improve on these scarce products, produce them in large quantity so as to increase their income.

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