

Structure and Performance of Fresh Fish Marketing in Yenagoa Local Government Area of Bayelsa State, Nigeria

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Abstract: *This research study analysed the conduct and performance of fresh fish marketing in Yenagoa Local Government Area of Bayelsa State. The broad objectives were to determine the structure and performance of fresh fish marketing in Yenagoa local government area of Bayelsa State. The specific objectives were to describe the socio economic characteristics of the respondents in the study area, analyse the structure and performance of fresh fish markets, and identify factors affecting profitability of fresh fish marketing in the study area. Primary data was collected through well structured copies of questionnaire. Descriptive statistics (means and percentages), and inferential statistics (Lorenz curve, the Gini coefficient and Gross Margin analysis) were used for the analysis of data collected. Multiple linear regressions were used to analyse the results. The results showed that 100% of the marketers were female, the predominant age range of the marketers was 50-60 years comprising 30.8% of the respondents, 76.0% of the marketers were married, 63.8% had secondary education, 84.2% predominantly engaged in fresh fish marketing as their major occupation, the predominant marketing experience indicated by respondents was above 10 years (37.7%) of the population of study. The Gini coefficient of the market was 0.23, indicating that there was competition among sellers, the Lorenz curve did not deviate far from the line of equality, indicating that there is equitable income distribution among marketers. Gross Margin of ₦ 7, 116.00 was realized per marketer daily. The gross margin (%) was 33.53%. The constraints militating against fresh fish marketing were inadequate financing, high transportation cost and lack of market stall. The factors that determined the profitability of fresh fish marketers were the Cost of purchasing fish, Cost of transportation, Refrigeration cost, and Labour cost. The study concluded that fresh fish marketing in Yenagoa local Government Area is profitable and efficient, and recommended that funding should be made available for the marketers to expand their business and standard shops should be built for the marketers to shield them from the harsh elements of weather and climate.*

Keywords: *Market, marketing, structure, performance, gross margin, fresh fish, Nigeria*

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I. Introduction

Fish is one of the most diverse groups of animals known to man with over two thousand five hundred species. There are more species of fish than all other vertebrate (Eyo, 2001; as cited in Nkiru 2014). The fishery sector is estimated to contribute about 3.5% to Nigeria's Gross Domestic Product (GDP), and also provides direct and indirect employment to over six million people (Kwara State Government, 2010). Employment opportunities come from different fishing activities such as production, processing, preservation and transportation (Ali, Gaya and Jampada, 2008). The Central Bank of Nigeria, CBN (2005) report shows that the contribution of the fishery sector to the GDP of Nigeria rose from N76.76 billion in 2001 to N162.61 billion in 2005. According to Farrington, Christoplos, and Beckman (2002) marketing havoc faced by fish marketers was a direct confirmation of assertion that farmers need extension education on a diverse range of rural development options, including: information on markets, rural enterprises and other income generating opportunities. Conversely Bassey, Attairot, Nkeme and Udoh (2014) also opined that fish handling is a very delicate business and needs several strategies to reduce post-harvest losses. Reheim and Sutinem, (2006) declared that seafood is one of the most extensively traded commodities in the world and export of fish produce from developing countries, comprise 20% of agriculture and food processing exports and is likely to increase as demand for fish produce continues to increase. On the other hand, Irhivben, Enyioko, Oluwafemi and Yusuf (2015), asserted that the Nigerian fish market is characterized by indigenous mechanism depending on season, ability of buyers to bargain and of course the concept of demand and supply. However, a sustainable fish production depends on its marketing structure and performance to close up demand and supply gap. The domestic fish marketing system can be described as neither efficient nor modern and is mainly carried out by private traders with a large number of intermediaries between producers and consumers, thereby reducing the fisherman's share in consumers'

purchases. In Nigeria, agriculture has failed to meet the food needs of the growing population. One of the possible reasons for this failure, as asserted by Ayinde, Adewumi and Ojehomon (2009), is the malfunctioning of marketing chain of major food leading to high rate of spoilage, constant food shortage, rising farm products prices and huge importation costs. The role of marketing cannot be over emphasized as production centres are fragmented and mostly in small scale (FAO, 2009)

Objectives of the Study

The broad objective of the study is to analyse the structure and performance of fresh fish marketing in Yenagoa local government area of Bayelsa state. The specific objectives are to

- (i) describe the socio economic characteristics of the respondents in the study area
- (ii) analyse the structure and performance of fresh fish market
- (iv) identify factors affecting profitability of fresh fish marketing in the study area

Theoretical Framework

According to Bain (1968), the basic component of the structure, conduct and performance (SCP) model is the market structure, i.e. the number and size distribution of buyers and sellers, the conditions of entry and the degree of product differentiation. Market structure is defined as the characteristics of the organization of a market, which seem to influence strategically the nature of competition and pricing behaviour within the market. Structured characteristics may be used as a basis for classifying markets.

Adegeye and Dittoh (1982) identified different types of market structure as perfectly competitive, monopolistic, oligopolistic and pure monopoly. Koch (1980) identified four factors to be considered in determining market structure as degree of seller concentration, the degree of buyer concentration, the degree of product differentiation and the condition of entry. These elements measure the extent of deviations from the perfectly competitive norm. The larger the deviation, the more imperfectly competitive is the market, which an extreme case will be monopoly.

These structural characteristics are therefore, used as a basis for classifying markets. Markets may be perfectly competitive, monopolistic or oligopolistic. The ideal market structure for optimal efficiency is pure competition. A market is said to be competitive when there are many buyers and sellers, free entry conditions, high degree of price competitions and perfect market knowledge (Bila and Bulama, 2004).

Market performance as described by Giroh et al. (2010) is the strategic end result of market adjustments engaged in by buyers and sellers. The main features used in assessing market performance are the level of profit, scale and utilization of plants and firms, scale and promotion costs and character of the product and progressiveness.

Brestler and King, (1970), opined that market performance could be the impact of structure and conduct as measured in terms of variable such as prices, cost and volume of output. Gross margin, marketing margin and marketing efficiency are the major indicators of market performance, while costs and returns are the indicators for farm profitability analysis.

According to Olukosi and Erhabor (1988), Gross margin is used as a tool for planning where fixed costs is a negligible portion of the enterprise. Gross margins are calculated by subtracting fixed and variable costs from the gross returns. Therefore, Gross margin is used as a budgeting tool for measuring efficiency and profitability among different enterprises. Net returns would roughly equal a "fair" return to the middleman's capital, if the market were perfectly competitive.

II. Methodology

Study Area

The study area is Yenagoa, which is currently the capital city of Bayelsa. Yenagoa has an area of 706 km² and a population of 352,285 (NPC, 2006). It is bounded by Ekeremor Local Government Area in the West, on the North by Kolokumo-opokumo Local Government Area, and East by Ogbia Local Government Area while on the South by Southern Ijaw Local Government.

Research Design

In this study, the survey research method was adopted.

Data Collection Method and Sources

Data for this research was collected from primary source, interview schedule and structured copies of questionnaire were used to obtain data from the respondents.

Data Analysis Techniques

Frequency distribution, means and percentages was used to describe the Socio-economic characteristics of the respondents.

The Lorenz curve was used to analyse the Structure of the market, specifically the income distribution of the marketers.

The Gini coefficient was used to measure the level of sellers' concentration. This was used to determine the degree of competition or monopoly in the market.

The Gini coefficient (G) is represented by equation (1) i.e.

$$GC = 1 - \sum_{k=0}^n \{(X_k - X_{k-1})(Y_k + Y_{k-1})\} \tag{Equation 1}$$

Where GC = Gini coefficient

X_k = the cumulated proportion of the population variable, for $k = 0 \dots n$, with $X_0=0$ and $X_n=1$.

Y_k = the cumulated proportion of the income variable, for $k = 0 \dots n$, with $Y_0=0$ and $Y_n=1$

Σ = Summation sign

Gross margin analysis was used to determine the performance of fresh fish marketing in the study area.

$$GM (\%) = \frac{GI - TVC}{GI} \times 100 \tag{Equation 2}$$

Where:

G.M (%) = Gross margin in percentage,

GI = Gross sales/income,

TVC = Total variable cost.

$X_1 - X_6$ = the coefficients for the respective variables μ = error term,

The regression model for hypothesis 3 can be expressed as:

$$Y = f(X_1, X_2, X_3, X_4, X_5, \mu_1) \tag{Equation 4}$$

Y = Profit

X_1 = Cost of purchasing fish

X_2 = Cost of transportation

X_3 = Refrigeration cost

X_4 = Daily tax payment

X_5 = Labour cost

III. Results and Discussion

Socio-economic characteristics of fresh fish marketers in Yenagoa LGA

Results on the socio-economic features of fish marketers are presented in Table 1. The results show that 100% of the marketers were female, the predominant age range was 50-60 years which was 30.8% of the total population, 76% of the marketers were married, 63.8% of the marketers had secondary education as their highest level of education.

Table 1: Socio-economic characteristics of respondents

Characteristics	Frequency (n=120)	Percentage (%)
Gender		
Male	-	-
Female	120	100%
Total	120	100
Marital Status		
Single	14	11.7
Married	92	76.7
Divorced	3	2.5
Widowed	11	9.2
Total	120	100
Educational Level		
No formal education	11	9.2
Primary Education	14	11.7
Secondary Education	82	68.3
Tertiary Education	13	10.8
Total	120	100
Household Size		
2-3	10	8.3
4-6	76	63.3
7-8	34	28.3
9 and above	-	-
Total	120	100
Occupation		
Fish marketing only	101	84.2
Fish marketing and fishing	-	-
Fish marketing and trading	12	10.0
Fish marketing and Govt. Employment	7	5.8

Total Marketing Experience	120	100
1-3 years	7	5.8
4-6 years	24	20.0
7-10 years	44	36.7
Above 10 years	45	37.5

Source: Field Survey 2018

From Table 1, the predominant household size was 2-3 persons which is 63.3% of the study population, 84.2% of the respondents majorly engaged in fresh fish marketing only, the predominant years of experience was 10 years and above representing 37.7% of the study population, 85.0% of the study population predominantly sold fresh fish daily

Structure of Fresh Fish Market

This can be described as the organisational and other characteristics of a fish market. It focusses on those characteristics which affects the nature of competition and pricing of fish, but it is important not to place too much emphasis simply on the market share of the existing firms in a fish industry.

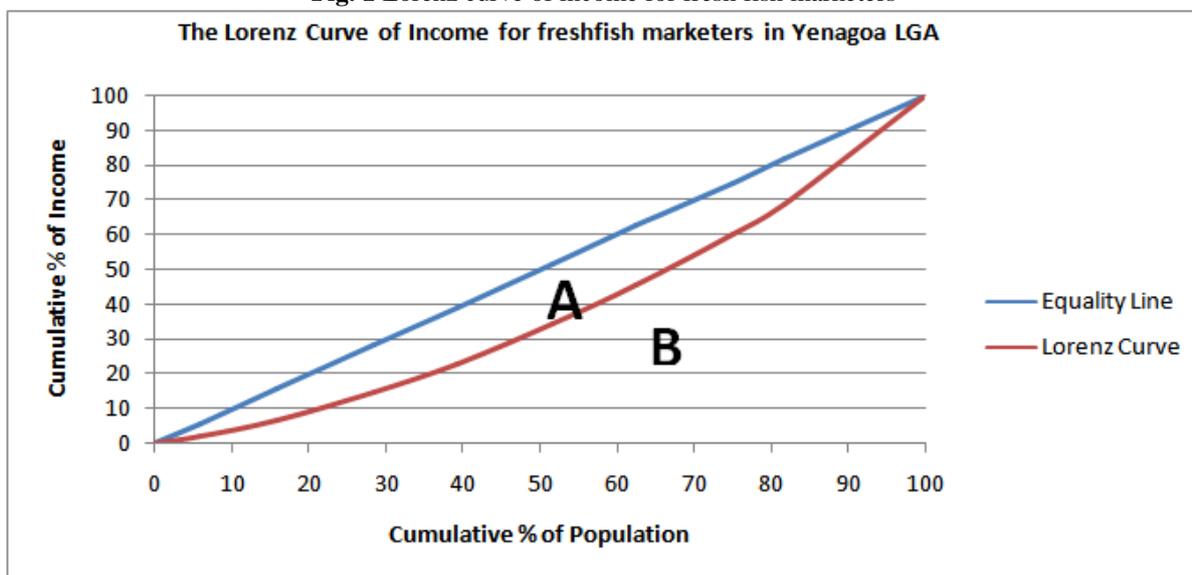
Table 2: Daily Income distribution of fresh fish marketers

Income Range (₦)	No. Of Marketers (Frequency)	Total Income (₦)	PCI (₦)	Percentage of Marketers	Percentage of Income	Cumulative Percentage of Marketers	Cumulative Percentage of income
2000-2999	7	16200	2314.28	5.83333333	1.90520993	5.83333333	1.90520993
3000-3999	12	39900	3325.00	10	4.69246148	15.83333333	6.59767141
4000-4999	15	69900	4660.00	12.5	8.22062801	28.33333333	14.8182994
5000-5999	13	69100	5315.38	10.83333333	8.12654357	39.16666667	22.944843
6000-6999	15	96000	6400.00	12.5	11.2901329	51.66666667	34.2349759
7000-7999	13	94600	7276.92	10.83333333	11.1254851	62.5	45.360461
8000-8999	15	123500	8233.33	12.5	14.5242855	75	59.8847466
>10000	22	265700	12077.27	18.33333333	31.2477949	100	100
TOTAL	120	850300	-	100	100	-	-

Gini- coefficient = $\frac{A}{A+B} = 0.238309$ (A = 1191.545, B = 3808.455)

Source: Field Survey 2018

Fig. 1 Lorenz curve of income for fresh fish marketers



From fig. 4.3, the Lorenz curves does not deviate far from the line of equality, this indicates that the income inequality among fresh fish marketers is low. The value of the Gini-Coefficient is low 0.23 which indicates that the market concentration among the marketers is high, signifying competition among fresh fish sellers, no person or group of persons controls the market this is contrary to Lawrence and Sylvester (2014) where the Gini coefficient for fresh fish markers in Ondo state is 0.64 indicating low concentration

Table 3: Gross Margin analysis of fresh fish marketers

Markets	Gross Margin	Gross Margin (%)
Tombia	6730.00	34.65
Swali	9575.00	37.78
Kpansia	6418.75	33.30
Opolo	6700.00	32.42
Igbogene	6306.25	31.40
Gwewe	5593.75	27.57
Yenezuegene	7975.00	36.21
Average	7,116.66	33.53

Source: Field Survey 2018

$$\text{Gross Margin (\%)} = \frac{\text{Total revenue} - \text{Total variable cost}}{\text{Total revenue}}$$

Table 3 shows that the daily gross margin per marketer is ₦7,116.66. For the gross margin (%) which is the gross margin, described as a percentage of revenues, the average Gross Margin (%) is 33.53%. Margins above 25% indicate financial efficiency and stability, while gross margins (%) below 20% indicate financial vulnerability. A gross margin of 33.53% for fresh fish marketers indicates efficiency among fresh fish marketers.

Table 4: Regression results for the effects of operating cost on the profitability status of fresh fish marketers

Variables	Coefficient	Std. Error	Beta	t-Statistics	Sig.	N
Constant	-6286.677	2485.214		-2.530	.013	120
Cost of purchasing fish	.679	055	.879	12.322	.000	120
Cost of transportation	-.485	.294	-.116	-1.653	.010	120
Refrigeration	18.709	4.843	.199	3.863	.000	120
Daily tax payment	-1.258	3.137	-.020	-.401	.689	120
Labour	9.817	3.853	.129	2.548	.012	120
Mean of dependent variable	7116.6667					
S.D of dependent variable	3511.47778					
R-squared	.737					
Adjusted R-squared	.725					
S.E of regression	1840.21132					
Sum of squared Resid.	386047058.330					
F-Statistics	63.861					
F-Probability	.000 ^b					

Dependent Variable: Profit

Source: Authors computation from SPSS

From table 4 the p value of the independent variables are Cost of purchasing fish 0.000, Cost of transportation 0.010, Refrigeration cost 0.000, and Labour cost 0.012 are all less than 0.05 except for Daily tax payment which have a p value 0.689 which is greater than 0.05. The ANOVA tables has a p value of 0.000 which is less than 0.005 indicating there is significant relationship between operating cost and profitability of respondents, also the adjusted R² which is the correlation coefficient is 0.73 (73%) which indicates a very strong degree of correlation between market operating cost and profitability status of respondents between the operating cost of fresh fish marketers and their profitability status.

IV. Conclusion

From the results of the Lorenz curve and the Gini coefficient, there is fair income distribution among the fresh fish marketers in the study area which shows that fresh fish marketing in Yenagoa local government area is a competitive market which is not controlled by any person or group of persons. The gross margin (%) of 33.5% shows that the market is an efficient market.

Based on the findings of the constraints militating against fresh fish marketing in the study area, the following recommendations were made:

- Funding should be made available for the traders to expand their business; and
- Standard shops should be built for the marketers to shield them from the harsh elements of weather and climate

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