

ECONOMIC POTENTIALS OF FISH MARKETING AND WOMEN EMPOWERMENT IN NIGERIA: EVIDENCE FROM OGUN STATE

Babalola DA*¹; O Bajimi¹, and SU Isitor²



Akinola Babalola

*Corresponding author email: akindan15@yahoo.com

¹Department of agricultural economics and extension, Babcock University, Ogun state, P.M.B. 21244, Ikeja, Lagos, Nigeria

²Department of Agricultural Economics and Extension, Landmark University, Omu-Aran, Kwara State, Nigeria

ABSTRACT

This study examined the economic potential of fish marketing and women empowerment in Ogun state. Ninety two women fish marketers were selected using the multi-stage sampling procedure. The data collected through the use of questionnaire were analyzed using descriptive statistics, marketing margin and regression technique. The result of the socioeconomic characteristics showed that 56.5 percent had only primary education, 82.6 percent were married and 69.6 percent were between the ages of 30 and 50 years. Some 52.2 percent of the respondents had greater than 10 years experience marketing fish and 66.3 percent were retailers. About 45.7 percent sold frozen fish and only 39.1 percent participated in cooperative marketing. The result of the budgetary analysis showed average marketing margin of ₦6, 280 per week for the respondents and marketing efficiency greater than one which indicated profitability of the enterprise and further showed the potential of fish marketing contribution to women's economic empowerment. The regression results showed that the variables which positively and significantly influenced marketing margin among fish marketers were the value of sale per week ($p < 0.01$); volume of trade per week ($p < 0.01$); level of education ($p < 0.05$) and participation in cooperative marketing ($p < 0.05$). The cost of fish purchase negatively and significantly influenced marketing margin ($p < 0.01$). The major constraints faced by the respondents in fish marketing in the study area was the high cost incurred in preserving the fishes, huge initial expense, purchase price instability and inconsistent and high transport cost. It is recommended that in addition to the call on government to invest more in fish farming and distribution, fish marketers should be facilitated to improve their educational status and encouraged to participate in cooperatives. Furthermore, policies that will guarantee price stability and improve the microfinance arrangements should be put in place in order to increase the economic return from fish marketing.

Key words: Fish, women, empowerment, marketing margin

INTRODUCTION

Fish is an important source of good quality protein required in human diets. It has the highest level of easily metabolisable protein, fats, vitamins, calcium, iron and essential amino acids when compared to other sources of animal protein such as poultry and beef. Fish is important to the ever increasing world population, especially in most parts of Africa, as it is the major source of cheap high quality animal protein, contributing about 50 to 60 percent of the animal protein intake of the population especially in rural communities [1, 2].

The total demand for fish and fish products is higher in Nigeria than many other West African countries [2]. Despite the fact that the country has the potential to lead the continent in fisheries and aquaculture, some 800, 000 metric tonnes, which is more than 2/3 of domestic consumption of fish (accounting for about US \$48.8m in 2002 alone and almost US \$0.5bn annually thereafter) are annually imported to augment domestic supply, yet domestic demand is still not met [3]. Poor capital investment in the sector by the Nigerian government has been identified as a key constraint [4].

In most parts of Nigeria, especially south western, fish marketing whether in the live or processed form is mostly done by women [5]. Over the years, fish marketing has become such an important occupation among the women folk that some women inherit the enterprise from their mothers [6]. In rural communities where women are predominantly engaged in fish handling, processing and marketing, most families depend mainly on free fish supplied by the women of the household for food and the income derived from the enterprise for household upkeep [7]. Thus, the contribution of fish marketing to livelihoods, especially in rural and semi-urban Nigeria is apparent.

Women contribute significantly to the national economies through their participation in agricultural production, processing and marketing [8], yet more than 60 percent of the world-poor are women and they have fewer options than men to escape poverty [9]. The situation in Nigeria is not different [10]. The benefits derivable from empowering the women folk are far reaching, starting with family advancement and ultimately touching on the national and global economic advancement. Women constitute about 49 percent of the nation's population [10]. Thus, the under-representation of women in the nation's development processes, in finance, business and investment fronts renders over 40 percent of the population inadequately positioned to contribute to the economic growth of the country. It is important to note that it is the nation that blends the strengths of women and men that will lead the world in development in the field of agriculture and other sectors [11, 12].

Since the establishment of the Millennium Development Goals (MDGs) in September 2000, different programmes have been organised in Nigeria which are geared towards achieving women empowerment as highlighted in the Millennium Development Goals (MDGs). The Family Support Programme (FSP) initiated with Family Economic Advancement Programme (FEAP) as its financial back-up and the Better Life Programme (BLP) initiated to contribute to empowering women in the area of education, politics, finance and skills acquisition are examples of these programmes. However,

these programmes mostly ended or stopped abruptly when the regimes of the governments which initiated them ended. The establishments of the National Economic Empowerment and Development Strategy (NEEDS), State Economic Empowerment and Development Strategy (SEEDS) and the Local Government Economic Empowerment and Development Strategies (LEEDS) in 2004 were all designed to re-orientate values, reduce poverty, create wealth and generate employment under the Presidential Initiative on fisheries management and development amongst other initiatives [13]. The ultimate goal is to make Nigeria self sufficient in fish production in the short term with a target annual production of two million metric tonnes by the year 2010 [13]. This goal is yet to be realised.

Nigeria faces enormous challenges to improve food security, provide employment and ensure that women are mainstreamed into economic activities especially agro-based enterprises either at micro or macro level. Despite the lack of data, there is increasing realisation of the critical role of women in agriculture and food production and of the fact that the empowerment of women is necessary to bring about sustainable development at a faster pace [3, 14]. Women are responsible for half of the world's food production in most developing countries. In Nigeria women are responsible for about 70 percent of actual farm work and constitute up to 60 percent of the farming population [9].

In spite of the roles of women in agriculture and marketing, enough attention has not been given to targeting the focus of empowerment policies and programmes at these enterprises which have greater potential at impacting the women. One such enterprise is fish processing and marketing. The annual increase in the demand for local fish in Nigeria [15] makes fish marketing a viable enterprise. The Fishery sector's contribution to the nation's GDP as at 2011 was about 4 percent, representing one billion dollars (₦ 150 billion) of the 20 billion dollar (about ₦ 3 trillion) total contribution from agriculture [4, 16]. By this, the Fishery sub-sector is endowed with the potential for creating employment opportunities and food security for millions of Nigerians especially those involved in direct fishing, processing and marketing. Ogun state is one of the six identified maritime states in Nigeria [17]. There are over 300 fish hatcheries and over 6,000 fish farms in the state, majority of which are privately owned [16, 18] which makes fish production, processing and marketing a significant occupation in the state. It is against this backdrop that this paper analyzed the economic potential of fish marketing and its implication for women empowerment in Ogun state.

RESEARCH METHODOLOGY

This study was conducted in Ogun state, South-west Nigeria. The state is well endowed with natural water bodies including springs, perennial flowing rivers, lakes and brackish waters. There are twenty Local Government Areas in the state, which has been further divided into four Agricultural extension zones namely: Abeokuta, Ilaro, Ijebu-Ode and Ikenne [19]. These zones are well known for fish production and marketing [16]. The main occupations of the people in the state are: agriculture, fishing, clothing, textiles and civil service. The study made use of primary data. The main instrument for collecting the primary data was a structured questionnaire. Information was collected on socio-economic characteristics of the respondents and the costs and returns to fish marketing.

A total sample of 92 female fish marketers were selected from the central markets of the four agricultural extension zones in the state using the multistage sampling procedure.

Data analysis was done using the descriptive statistics (which include frequency distribution and percentage frequencies), budgetary technique and the multiple regression technique.

Budgetary Technique

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:

$$MM = TR - TC \dots\dots\dots (1)$$

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

Where: TR = Total Revenue (₦) (Price/kg multiplied by the quantity sold);
 TC = Total Cost (₦) (consists of the cost of purchase in naira, the cost of storage in naira per week and the cost of transportation in naira per week);
 MM = Marketing Margin (₦) (which is the indicator of profitability) and
 ME = Marketing efficiency (₦).

The Regression Model

The multiple regression model was employed to determine the influence of socioeconomic factors, purchase price and other marketing costs on the fish marketing margin.

The model can be explicitly stated as:
 $Y = f (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, e) \dots\dots\dots (3)$

- Where;
- Y = marketing margin
 - X₁ = age women in yrs
 - X₂ = level of education in yrs
 - X₃ = experience in trade in yrs
 - X₄ = volume of trade in kg (per week)
 - X₅ = value of sale per week in naira
 - X₆ = cost of purchase in naira
 - X₇ = marketing cost in naira (which include transport, storage, packaging, grading, extra)
 - X₈ = form of sale (fresh=1, processed=0)
 - X₉ = participation in cooperative marketing (yes=1, no=0)
 - e = error term

Following Olayemi [20], the relationship between the endogenous variable and each of the exogenous variables were examined using linear, exponential, semi-logarithm and double-logarithm functional forms. The lead equation was chosen based on the value of the coefficient of determination (R²), statistical significance and economic theory that support fish marketing.

The equations of the functional forms are specified as follows:
 Four functional forms were fitted into the analysis, the models being: linear, exponential, double- log and semi-log functional forms

Linear: $Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 \dots + b_9X_9 + e \dots\dots\dots (4)$

Semi-log: $Y = \log b_0 + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 \dots + b_9 \log X_9 + \log e \dots\dots (5)$

Exponential: $\log Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 \dots + b_9X_9 + e \dots\dots\dots (6)$

Double-log: $\log Y = \log b_0 + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_9 \log X_9 + \log e (7)$

RESULT PRESENTATION

Results of socioeconomic variables

The result of the socioeconomic characteristics of the women fish marketers is presented in Table 1. The result showed that most of the women interviewed were married, had at least primary education and over 50 percent of them had been marketing fish for over 10 years.

The mode of fish marketing was either wholesale, retail or both. From the data collected, most of the respondents (66.3%) were retailers and sold their fish in the frozen form (45.7%). However, some 37% of the women sold only fresh or live fishes. Only about 39 percent of the respondents participated in cooperative marketing. The results further showed that the majority of the women earned between ₦ 5,000 and ₦ 10,000 (\$ 31.25- \$ 62.50) weekly from sale of fish.

The results of the budgetary analysis

Table 2 presents the results of the overall marketing margin and marketing efficiency of the fish marketers under analysis. The marketing margin was used as the indicator for profitability. The average marketing margin (profitability indicator) for the fish marketers per week was ₦6, 280. This shows that the average marketing margin per month could be as high as ₦ 25,000.

The marketing efficiency was above one (1.13), 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 costs.

Factors influencing variation in marketing margin

The regression analysis was used to predict the influence of the hypothesized explanatory variables on the marketing margin (profitability indicator). The semi-logarithm functional form was chosen as the lead equation based on the criteria earlier stated in the methodology. The result of the regression output is presented in Table 3.

The adjusted coefficient of determination (R^2) is 0.645 indicating that 64.5 percent of the variation in the marketing margin is explained by the variations in the specified independent variables. The value of the F-statistics was found to be significant at 1 percent. These diagnostic statistical results showed that all the independent or

explanatory variables had a joint impact on the dependent variable; thus, the model was of good fit.

The regression result shows that the variables that were significant with a positive sign include the value of sale per week ($p < 0.01$); volume of trade per week ($p < 0.01$); level of education ($p < 0.05$) and participation in cooperative marketing ($p < 0.05$). Thus a percentage increase in these factors, respectively, will yield 2.470%, 0.065%, 0.099% and 0.201% increase in the marketing margin of the respondents. The cost of fish purchase was negatively significant ($p < 0.01$) indicating that a percentage increase in the purchase cost will lead to 2.047% decrease in the marketing value.

Constraints to fish marketing

The respondents were interviewed for the common constraints they faced in fish marketing. Results in Table 4 showed that the major constraint faced by the respondents in fish marketing in the study area was the high cost incurred in preserving the fishes. This was reported as a severe constraint by 62 percent of the women. Other major constraints reported were huge initial expense (59% reported as severe), purchase price instability (52% reported as severe) and inconsistent and high transport cost (48% reported as severe).

DISCUSSION

The age and marital status distribution of the respondents reflects that there will be a high desire to increase family income by the respondents. Most married women become more financially responsible for their household in Nigeria with advancement in age [3]. The years of experience of the respondents facilitated their ability to supply necessary cost and benefit information for the calculation of their marketing margin and efficiency. The predominance of retail sales among the respondents has implication for volume of sale and storage cost. Retailing suggests that the volume of sale was relatively low for most of the marketers.

In the results of this study, the reason for the majority marketing frozen fish may be as a result of few varieties in the local catch and locally raised fishes or the high demand for imported and exotic fish variety. This has considerable implication for high cost incurred for refrigeration and storage. This is likely the reason why most of the women identified high cost incurred for preserving their fish as a major constraint.

The educational level of most of the women was relatively low. However, they earned above the minimum national wage of ₦18, 000 per month from fish marketing [21], thus showing the potential of the enterprise for economic empowerment. The budgetary analysis, in corroboration with this result, further indicated that fish marketing has great potential as a profitable venture for the women involved in it and can contribute meaningfully to women empowerment (respondents average earnings was ₦25,000 per month, against ₦18,000 national minimum wage per month). This result agrees with previous studies [3]

Factors positively influencing marketing margin (meaning increasing or improving them will increase marketing margin), an indicator of profitability, included value of sales, volume of trade, level of education and participation of the women in cooperative marketing. These factors follow a priori expectations consistent with previous studies [3, 22]. The descriptive results, however, showed that the respondents' level of education is low, they participated poorly in cooperative marketing and their volume of trade was likely to be low since they were mostly retailers. The purchase cost which negatively influenced marketing margin may be due to the lack of credit facilities for the fish marketers as insinuated in their constraints result.

CONCLUSION AND RECOMMENDATION

The study focused on economic potentials of fish marketing and how it can be used as a tool for women empowerment in Ogun state. The results obtained have shown that fish marketing is one well known enterprise among women in the study area which they carry on efficiently and profitably over the years. It is thus established that fish marketing had huge potential for the economic empowerment of the women folk if well supported relevant policies are put in place. However, the various factors which influenced the marketing margin must be addressed. Thus it is recommended that in addition to the call on government to invest more in fish farming and distribution, women fish marketers should be encouraged to improve their educational status and to participate in cooperatives. Policies that will guarantee sale, price stability and improvement in the microfinance arrangements should be put in place. This will go a long way to further increase the economic return from fish marketing in the study area in particular and in the nation as a whole.

Table 1: Socio-Economic Characteristics of Respondents

| Characteristics | Frequency(n= 92) | Percentage (%) |
|---|-------------------|----------------|
| Marital status | | |
| Married | 76 | 82.6 |
| Single | 16 | 17.4 |
| Age | | |
| <30 | 16 | 17.4 |
| 30-40 | 33 | 35.9 |
| 41-50 | 31 | 33.7 |
| >50 | 12 | 13.0 |
| Educational level | | |
| No Education | 14 | 15.2 |
| Primary School | 52 | 56.5 |
| Secondary School | 26 | 28.3 |
| Experience in marketing fish (years) | | |
| <6 | 18 | 19.6 |
| 6-10 | 26 | 28.3 |
| 11-15 | 24 | 26.1 |
| 16- 20 | 14 | 15.2 |
| >20 | 10 | 10.9 |
| Participation in co-op marketing | 36 | 39.1 |
| Mode of fish marketing | | |
| Wholesale only | 8 | 8.7 |
| Retail only | 61 | 66.3 |
| Both | 23 | 25.0 |
| Form of fish sale | | |
| Fresh | 34 | 37.0 |
| Frozen | 42 | 45.7 |
| Smoked | 12 | 13.0 |
| Others | 4 | 4.3 |
| *Income (GM) from weekly sales | | |
| <5,000 | 21 | 22.8 |
| 5,000-10,000 | 53 | 57.6 |
| >10,000 | 18 | 19.6 |

*income in naira, ₦1~ \$ 0.00625

Source: Field Survey (2011)

Table 2: Marketing Margin and Efficiency of Fish Marketers

| | Variables | Value in naira |
|---|----------------------------|----------------|
| a | Total cost | 4,679,480 |
| b | Total revenue | 5,306,570 |
| c | Marketing margin (b-a) | 627,240 |
| d | Marketing efficiency (b/a) | 1.13 |

Source: Computed from Field Survey (2011)

Table 3: the Semi Log Regression for Determinants of Marketing Margin

| Variables | Coefficient | t-value |
|------------------------------|-------------|---------|
| Constant | 7.328* | -5.024 |
| Age | -0.057 | -0.560 |
| level of education | 0.099** | 2.234 |
| experience in trade | 0.029 | 0.280 |
| Participation in group co-op | 0.201** | 2.210 |
| volume of trade | 0.065** | 2.492 |
| value of sale per week | 2.470* | 5.421 |
| cost of purchase | -2.047* | -4.905 |
| marketing cost | 0.228 | -2.064 |
| form of sale | 0.036 | 0.398 |

*significant at 1 %, ** significant at 5 %. $R^2 = 0.645$, F -value = 21.689

Source: computed from field survey (2011)

Table 4: Common constraints to fish marketing in the study area

| S/N | Constraints | Severe | Mild | Not a constraint |
|-----|---|-----------|-----------|------------------|
| 1 | High cost for preservation | 57 (62.0) | 35 (38.0) | 0 (0.0) |
| 2 | Inconsistent and high transport cost | 44 (47.8) | 36 (39.1) | 12 (13.1) |
| 3 | Purchase price instability | 48 (52.2) | 52 (47.8) | 0 (0.0) |
| 4 | Huge initial expenses | 54 (58.7) | 37 (40.2) | 1 (1.1) |
| 5 | Lack of finance | 40 (43.5) | 47 (51.1) | 5 (5.4) |
| 6 | High inflation rate in the economy | 37 (40.2) | 52 (56.5) | 3 (3.3) |
| 7 | Few and low acceptability of local breeds of fish | 15 (16.3) | 42 (45.7) | 35 (38.0) |

Numbers in parentheses are percentage frequencies

Source: computed from field survey (2011)

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