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Comparative Profitability of Women Dominated Fish-based Livelihood Activities in Southwest, Nigeria

[1] T. E. Mafimisebi, [2] E. S. Ikuemonisan, [3] O. E Mafimisebi

[1, 2]Department of Agricultural & Resource Economics School of Agriculture & Agricultural Technology, The Federal University of Technology, Akure, Nigeria, E-mail: temafimisebi@futa.edu.ng
[3]Department of Agricultural Technology, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria, E-mail: temafis@yahoo.com

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Abstract

Women are more disadvantaged than men in many fronts and this confines them to informal sector livelihood activities. Any attempt to improve women's economic status will require information on the organization, cost and returns to investment in the livelihood activities in which they predominate. This is the issue for this study which compared yield performance in artisanal fishing and fresh fish marketing. Primary data collected through multi-stage sampling method were analyzed using inferential statistics, budgeting and regression models. Empirical findings revealed that about 75.0% of fisher folks either had no formal education or acquired only primary school education while 50.0% of marketers had secondary school education. The budgeting model revealed fisher-folks' and marketers' annual net profit to be N2,882,626.00 and N640,227.00, respectively. Profit from fishing was significantly higher than that of fish marketing. At 53.2% for fishing and 40.3% for marketing, returns to investment was better in fishing. Regression model results showed the significant factors influencing returns to each livelihood strategy to include fishing ground, distance covered and years of experience. The major constraint faced by operators of both livelihoods groups was insufficient credit. Despite this, the livelihood strategies were shown to be profitable ventures which contributed to households' consumption expenditure. Organizing women informal sector operators into groups to enhance access to government support and formal credit are recommended for improving livelihood strategy performance.

Keywords: Fishing, Marketing, Women, Profit, Investment, Ondo State, Nigeria.

1. Introduction

Giving more recognition to the role women play in agrarian and rural societies is fundamental to national development (Mafimisebi & Fasina, 2009). More importantly, recognizing and supporting women to perform their role is crucial for the development of women and the fulfillment of their productivity potential in an economy. According to Adisa and Okunade (2005), traditional agriculture and fisheries in Nigeria is characterized by labour division on gender lines in various tasks and enterprises. Women are the backbone of the agricultural sector in Nigeria as they account for 70.0% of farm labour and 80.0% of food production (Adisa & Okunade, 2005; Mafimisebi, 2010; Mafimisebi et al., 2013). In spite of these substantial contributions to agricultural and rural development, women continue to be systematically marginalized in terms of access to resources, skills and formal sector employment opportunities (Mafimisebi et al., 2013). They are also, unfortunately, not given adequate recognition in economic policies (Rahman & Alamu, 2003; Mafimisebi & Fasina, 2009). Sorenson and Hullow (1990) and Mafimisebi (2007) observed that gender inequality in the distribution of benefits within the household is an important factor in explaining the low level of productivity among rural households. It is therefore harmful and counterproductive to restrict women's access to adequate productive inputs.

There are increasing economic and social pressures on women to contribute more to household income and assets and this have forced them to widen or broaden their livelihood activities in a bid to improve income and food security. Although in the opinion of Albu et al. (2004), the capacity of farming to provide the major means of survival for the rural populace is fast diminishing in the developing world. It was posited that declining food prices, competition for land, access to markets and declining productivity, have led smallholder farmers to diversify into rural non-agricultural activities which necessitate migrating to urban areas. Similarly, AgREN (2004) explained that the pull of an expanding economy and the push of unprofitable farming mean that there is a growing necessity for income diversification in rural households. Winters et al. (2001) reported that rural households obtain additional income from migrant remittances, agricultural wage employment and sale of cottage industry products. The evidence suggests that not only is the rural sector fairly diversified across activities, but also that individuals, especially women, engage in a range of activities as part of their survival strategies (Mafimisebi, 2007; Mafimisebi et al., 2013). Women are a great force behind the diversification of income-fetching activities as they do all sorts of things to assure the household of food security during off-farm seasons and periods of shocks.

According to WorldFish Centre (2005), fish is regarded as a source of "rich food for poor people" and is thus capable of playing an important role in improving Africa's food security and nutritional status. More than 200 million Africans eat fish regularly. In the fresh, but more often in the smoked, dried, or frozen form, fish is a critical source of dietary protein and micronutrients for many isolated communities in rural

areas (Mafimisebi, 2011). Fish may also be the sole accessible and/or affordable source of animal protein for poor households in urban or peri-urban areas. It has been estimated that about 40% of animal protein intake in Nigeria emanates from fish with the figure reaching as high as 80% in coastal and riverine communities (Areola, 2007; Mafimisebi, 2011; Mafimisebi, 2012). Nutritionally, fish is therefore one extremely important direct source of protein and micronutrients for millions of people in Africa. FAO estimates that 22% of the protein intake in Sub-Saharan Africa is derived from fish. In addition, fish also contributes indirectly to national food self-sufficiency through trade and exports. Fish as a subsistence product is an important source of income and direct food security for fishing households (Mafimisebi, 2012; Syampaku & Mafimisebi, 2012). Inland and coastal fisheries and related fish processing and trading provide full or part-time employment to between 6 and 9 million people in Sub-Saharan Africa (WorldFish Centre, 2005). Using a conservative ratio of 1 to 5 for household size, a total of some 30 to 45 million people (men, women and children) in Africa therefore depend indirectly on fish for their livelihoods.

Statistical surveys have shown that the demand for fish in Nigeria exceeds the supply, and also, the domestic production is still very low, considering the increasing human population. The annual fish consumption/demand in Nigeria has been estimated to be over 1.3 million metric tonnes and the total domestic production is just about 450,000 metric tonnes per annum (Tsadu et al., 2006). In spite of this low fish production, small-scale fisheries and related activities (processing and trading) provide employment and income to 2-3 million residents of rural coastal communities in Nigeria (Mafimisebi, 2011) where alternative employment opportunities are scarce or non-existent. In this situation, small-scale fisheries, fish processing and trade provide people, especially women, with an important and sometimes crucial form of safety-nets that help protect them against the effects of agricultural product price volatility, social-economic crises, harvest failures and other factors that threaten stability of the rural economy. In this way, small-scale fisheries substitute and/or complement other economic activities and help households sustain their living standard and food purchasing power.

For women in particular, fish processing and trading provide a very important livelihood support. In coastal communities, women dominate the processing and local trade in fish. As small-scale processing and/or trading at local markets require relatively little investments and skills, it provides income earning opportunities for a large number of women from the lowest strata of the society (Hall, 2005; Fasina and Mafimisebi, 2010). Most of these women lack education, literacy and the financial capital to engage in other livelihood activities. For these women, some of who are heads of households (Hall, 2005; Fasina & Mafimisebi, 2010), fish-based livelihood strategies therefore represent the primary and sometimes the only source of income as found by Hall (2005) and Fasina and Mafimisebi, (2010). Thus, fish based livelihoods hold great potential for income generation and poverty reduction especially among communities or households living near water resources (Onoja et al., 2012).

In the riverine areas of Nigeria, artisanal fishing and fresh fish marketing are two informal sector livelihood activities which are unattractive to men but widely engaged in by women (Mafimisebi, 2011). As these activities require little investment, they are dominated by females. However, questions on the magnitude

of the income realized from these livelihood strategies, which one gives better returns, the uses to which income earned from them is applied and the constraints to performance, remain largely unanswered issues to be addressed. This is our preoccupation in this study which assessed fish capture and fish marketing, the socio-economic characteristics of the women involved in them, the modus operandi of the participants and the returns to investment.

2. Materials and Methods: Study Area, Sampling Method and Data Collection

The study was carried out in Ilaje Local Government Area (LGA) of Ondo State (See Map of Ondo State depicting the study area in Figure 1). Ilaje LGA is the oil-bearing LGA in the state which earns the state its place among the nine oil-bearing states in the Niger-Delta region of Nigeria. Ilaje LGA is bounded in the South by the Atlantic Ocean and the LGA also earns the state its status as the state with the longest coastline in Nigeria (Ilaje Ese-Odo Local Government Handbook, 1989).

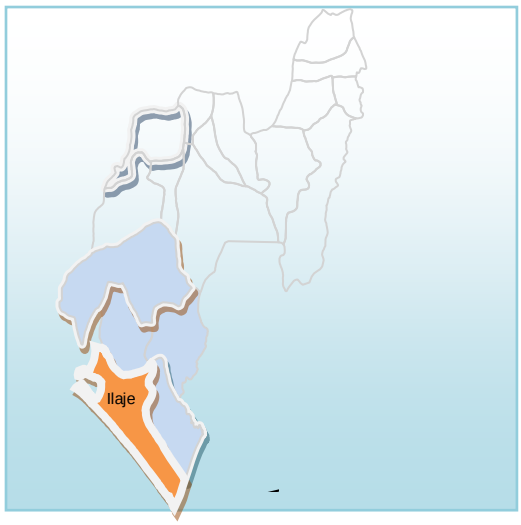

Figure 1: Map of Ondo State depicting Ilaje Local Government Area Analytical Techniques

This is in addition to varying river bodies with fresh water. Thus, the predominant occupations of the people of Ilaje LGA are fishing, fish smoking and fish marketing. The survey design approach (covering one production year) was used in the study. The study relied on primary data (responses from fisher folks and fish sellers) collected from 135 women (55 fisher folks and 80 fish marketers) selected through multi-stage sampling method. In the first stage, Ilaje LGA was purposively selected because of the prevalence of fisher folks and fresh fish marketers. In the second stage, two coastal towns of Aiyetoro and Idi-Ogba were purposively selected for been bordered with both the Atlantic and fresh water habitats. Thirty-five (35) fisher folks landing from fishing were interviewed at Aiyetoro while 25 were interviewed at Idi-Ogba in the water front of each town. Also, 50 and 30 marketers were interviewed in Aiyetoro and Idi-Ogba at the water front of each town where they await the arrival of the fisher folks from who they purchase fish for resale. A total of 135 women responded to questions drawn up in the questionnaire. Convenience or accidental sampling methods were used to select fisher folks and fish marketers who ventured data for the study. The data gathering instruments was a set of validated structured questionnaire for participants in each of the livelihood strategies.

The analytical tools through which data analysis was executed included descriptive statistics such as frequency and percentage which were used to summarize the socio-economic characteristics of fisher folks and fish marketers. The budgeting model was used to compute net profit and the profitability of the two ventures. The rate of returns to investment was computed using the values obtained from net profit computation. The mathematical computation of net profit is shown below.

$$NP = TR - TC \quad (1)$$

Where, NP= Net Profit

TR = Total Revenue

TC = Total Cost

Returns on investment (ROI) was calculated as NP divided by TC multiplied by 100. Consistent with Ashaolu et al., (2005), ROI is the ratio of profit to total amount invested. It indicates what is earned by the business in relation to capital outlay (Awotide & Adejobi, 2007). Also, Z-test was used to compare the profit accrued to fisher folks and fish marketers. The formula for the Z-test is shown below

$$z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{S_1^2/n_1} + \sqrt{S_2^2/n_2}} \text{ ---------- (2)}$$

Where,

z = standard "Z" distribution value (Z calculated)

$\bar{X}_1$ = mean net profit for fisher folks

$\bar{X}_2$ = mean net profit for fish marketers

S1 = standard deviation of net profit sample mean for fisher folks

S2 = standard deviation of net profit sample mean for fish marketers

n1 = sample size for fisher folks (55)

n2 = sample size for marketers (80)

The factors influencing yield performance (proxied by net profit) of the two fish-based livelihood activities were identified through ordinary least squares regression model.

For fisher folks,

Y = f (X1, X2, X3, X4, X5, X6, X7, X8, u) ……(3)

Where,

Y = Profit from fishing (N)

X1 = Quantity of fish caught for sale (kg)

X2 = Cost of inputs (N)

X3 = Age (years)

X4 = Fishing ground (freshwater =1 saltwater = 0)

X5 = Distance covered (nautical miles)

X6 = Household size

X7 = Years of experience in fish capture

X8 = Season (raining season =1, dry season = 2)

u = Random component which takes care of omitted variables that could affect profit.

For fish marketers, the explicit regression equation is of the form

Y = f (X1, X2, X3, X4, X5, X6, X7, X8, u) ……(4)

Where,

Y = Profit from fish marketing (N)

X1 = Quantity of fish sold (kg)

X2 = Cost of transportation (N)
X3 = Cost of fish purchased for resale (N)
X4 = Cost of other marketing functions (N)
X5 = Household size
X6 = Years of marketing experience
X7 = Age (yr)
X8 =Number of years of formal education
u = Random component which takes care of omitted variables that could affect profit.
Four functional forms (linear, semi-log, double-log and quadratic) were estimated. The lead equation (double-log functional form) was selected on the basis of economic, statistical and econometric criteria.

3. Results and Discussion

Table 1 showed the distribution of respondents by age, marital status, educational status, household size, time devoted to livelihood activities and years of experience. Majority of the fisher folk (38.0%) was less than 35 years while the corresponding value for marketers was about 24.0%. The survey revealed that 57.0% of fisher folks and 50.0% of fish marketers were within 36-45 years age bracket. This indicated that within this age bracket, there was a higher proportion of women in fish hunting than in fish marketing livelihood in the study area. While only 5.0% of fisher folks fell into the 50 years and more age bracket, the corresponding figure for marketers was about 26.0%. It can thus be inferred that at old age (> 50 years), there was greater proportion of women in fish marketing than in fish hunting. This could be because of the laborious nature and risks involved in fishing compared with marketing. The average age of fish hunters and fish marketers was 38 years and 41 years, respectively. These mean values tend to suggest that fisher folks were generally younger than fish marketers in the study area.
About 75.0% and 80.0% of fisher folks and fish marketers, respectively, were married. About 9.0% of fisher folks was widowed while 7.3% was divorced. This revealed that most of the women involved in these livelihood strategies had social and financial obligations to their household members and this necessitates the need for policy makers to pay attention to them through appropriate policy instruments that will lead to increased performance of livelihood activities. This is necessary as married women are normally faced with socio-cultural responsibilities the performance of which results in increased household welfare. As noted by Yahaya (2002), the increasing socio-economic crises faced in Nigeria have compelled women to assume more responsibilities in working to support their households. Hence, women make conscious effort to supplement household expenditure from income accruable from their businesses. This underscores the need to implement policies that can grow women-dominated businesses so that household livelihood can flourish.

Furthermore, 75.0% of fisher folks either had no formal education or received education only up to primary school level. Majority (50.0%) of marketers had secondary school education. Thus, there is relatively higher level of literacy among marketers compared with fisher folks.

The result of the survey also indicated that 51.0% of fisher folks and about 58.0% of fish marketers had household sizes of less than 7 while 40.0% and about 31.0% of fisher folks and fish marketers had 7-13 members in their households. About 9.0% and 11.0% of fisher folks and fish marketers, respectively, had household size of more than 13.

Furthermore, close to 75.0% of fisher folks submitted that fish capturing was their major occupation while 56.0% of fish marketers reported fish marketing was a major occupation to them. About 26.0% and 44.0% of the respondents opined that fish hunting and fish marketing were their minor occupations. Majority of fisher folks adduced the reason for their involvement in their venture as a continuation of the family's line of occupation. Some respondents said they came into the venture as a result of the opportunity provided by the water bodies around their dwelling hence they learnt the art of the business which has become a source of income. Most of the marketers considered marketing as an easier venture to engage in owing to its lower risks when compared to other popular fish-based livelihood strategies in the study area. The initial capital outlay required to commence fish marketing is said to be minimal and thus convenient to raise by any individual that wants to engage in it. Thus, the higher sample size of marketers compared with fisher folks in this study is indicative of the relative frequencies of the participants in both livelihood strategies. The fact that the financial outlay required for fish marketing is not as high as that needed for fish capture may have been responsible for this. Majority of fisher folks (74.0%) and marketers (70.0%) had between 6 and 10 years of experience.

Table 1: Distribution of Respondents by Selected Socio-economic Characteristics

	Fishing Folks		Fish Marketing	
Variables	Number	%	Number	%
Age Distribution (yrs)				
< 35	21	38.0	19	23.7
36 – 40	17	30.8	23	28.7
41 – 45	14	26.2	17	21.3
> 50	3	5.0	21	26.3
Total	55	100	80	100
Mean	38		41	
Marital Status				
Married	41	74.6	80	100
Widow	5	9.1	0	0
Divorced	4	7.3	0	0
Total	55	100	80	100
Education Status				

No Formal Education (1)	17	30.5	20	24.8
Primary School Education (2)	24`	44.5	20	25.5
Secondary School Education (3)	14	25.0	39	49.7
Tertiary Education (4)	0	0.0	0	0.0
Total	55	100	80	100
Household Size				
≤ 6	28	50.9	46	57.5
7 – 13	22	40.0	25	31.3
>14	5	9.1	09	11.2
Total	55	100	80	100
Class of Occupation				
Major	41	74.5	70	56.0
Minor	14	25.5	10	44.0
Total	55	100	80	100
Years of Experience				
1 – 5	7	12.7	15	18.6
6 – 10	41	74.3	56	70.0
11-15	7	13.0	9	11.3
Total	55	100	80	100

Source: survey data, 2012

Cost Components and Profitability of Operations

The net profit level in each of the two livelihood strategies was determined by analyzing the costs and computing the returns. The result is presented in Table 2. The result revealed that the cost of canoes and paddles accounted for the largest proportion (83.25%) of the total cost (TC) incurred in fish hunting. This was followed by the cost of fishing gears and baits (12.24%). Other costs such as maintenance costs for canoes and fishing gears accounted for 4.51%. Table 2 further revealed that fish hunting requires a relatively larger initial capital than fish marketing.

In terms of profit realized from the fish hunting livelihood, Table 2 provides information on the annual revenue and cost of the business. A TR of N8,297,952.00 was realized annually while the TC was N5,915325.25. The profit realized was N2,882,626.75. The result revealed the ROI to be 53.2%. This implies that for every N100 invested in fishing, the investor got about N53.20.

On the perception of fisher folks about the business, there was the general consensus that though people viewed the venture as being full of risks, they regarded the venture as a good one and with access to credit to expand the business scope, it can hugely sustain the livelihood of a sizeable number of households. The major threats to their fish hunting included rising cost of fishing canoes, short supply of

fishing gears and baits, attack by dangerous animals such as snakes and wasps, destruction of fish traps by carnivorous animals that prey on live fish and poaching of fish traps by thieves. Fish hunters said that the major threats to their business need to be addressed if their livelihood must flourish better that it is at present.

Table 2: Cost Structure of Fisher folks

	Cost (N)	Percentage (%)
A) Revenue generated from fish hunting per year = N8, 297,952.00		
B) Variable Costs		
Traps and baits	846,174.00	12.24
Other materials	312,000	4.51
Total Variable Cost (TVC)	1,158,174.00	
C) Depreciated fixed cost Items		
Boats/Canoes	5,757,151.25	83.25
Total Fixed Cost (TFC)	5,757,151.25	
Total Cost (TC)	6,915,325.25	

Source: survey data, 2012.

Note: (1) Net Revenue (NR) = Total Revenue (TR) – Total Cost (TC)

NR = ₦8, 297,952.00 - ₦ 6,915,325.25

NR = ₦2,882,626.75

(2) At the time of conducting this study, the exchange rate was ₦157= I USD.

In the fish marketing venture, costs were also incurred and profit was realized. Table 3 showed the variable and fixed cost items. The variable cost incurred by fish sellers included cost of fish purchased for resale (66.31%), cost of transportation (7.93%) and labour (1.50%). These three items together constituted about 76.0% of TC. Another fixed cost item was rent of premises which accounted for 11.34% of TC. Baskets, canoes/boats and performance of other marketing functions accounted for 0.98%, 8.86% and 3.10% of the TC, respectively. The respondents submitted that the cost incurred in the fish marketing venture in the study area is on the increase. The cost of transporting fish from point of purchase to the market and the cost of other marketing functions were identified as potential threats to the sustainability of the business.

In the marketing venture, TR of N2,228,000.00 was realized per year while TC was N1,587,773.00 giving a profit of N640,227.00. The returns on investment in fish marketing stood at 40.3%. This implies that for every N100 invested in fish marketing, the investor got N40.30.

The marketers considered the marketing venture a viable one. They opined that the high number of people engaged in the business in the study area limits profit accruable to marketers. They were of the

opinion that with enough capital, they can expand their business to attract more customers and increase the turnover as a result of being able to penetrate new market segments. They also opined that fish marketing faces less risks compared to fish hunting. However, their major challenges included high cost of canoes, perishability of unsold fish and lack of access to credit facilities to expand the business.

Table 3: Cost Structure of Fish Marketers

	Cost (N)	Percentage (%)
A) Revenue generated from fish hunting per year = 2, 228,000		
B) Variable Cost		
Cost of Transportation	126,024.00	7.93
Labour	23,744.00	1.50
Cost of Fish sold	1,052,838.00	66.31
C) Depreciated fixed cost items		
Rent of Premises(including market stall)	180,000.00	11.34
Basket	15,523.40	0.98
Boats/Canoes	140,300.00	8.86
Other Marketing functions	49,343.60	3.10
Total Fixed Cost (TFC)	385,167.00	
Total Cost (TC)	1,587,773.00	

Source: survey data, 2012.

Net Revenue = Total Revenue (TR) – Total cost (TC)

NR = ₦2,228,000.00 - ₦1,587,773

NR = ₦640,227.00

These returns are comparable to returns from other informal sector ventures in Nigeria (Mafimisebi et al., 2002; Mafimisebi and Okunmadewa, 2004; Mafimisebi, 2007; Mafimisebi et al., 2013).

Comparison of Returns to Livelihood Activities

Using the Z-statistic to test for difference of means between the returns from the two ventures gave result showing that there was a significant difference between the income generated by fisher folks and fish marketers at the 1% significance level.

Table 4: Test of Significance of Income of Hunters and Marketers

Group	Number (n)	Mean Income(N)	Z-Calculated
Fisher Folks	55	57,652.54	
			33.7***

Fish Marketers	80	8,002.84	

Source: survey data, 2012.

Factors Influencing Income from Fish Hunting and Fish Marketing

The factors influencing profit generated from fish hunting and fish marketing were determined through multiple regression model. In both cases, the double-log functional form gave the best-fit equation.

For fish hunting, the coefficient of determination, R2 values of 0.76 indicated that 76.0% of the variations in profit were explained by the explanatory variables. Among these factors were quantity of fish caught, distance covered, years of experience in hunting and season. These variables all carried positive signs indicating that they had directly proportional relationships with the profit accruable from fishing. However, the coefficient of the cost of inputs was negatively signed. This result is consistent with a priori expectations. This result also suggested that season plays a vital role in the volume and hence value of fish captured for sale. The result of the regression model also indicated that distance moved on water away from residential houses built on rivers significantly influenced the volume and value of fish caught.

Table 5: Results of the Determinants of Returns from Fish Hunting

Variable	Coefficient	Beta	T	Significance
Constant	9.282	-	6.235	0.000***
Qty of fish caught	0.601	1.421	3.421	0.001
Cost of input	-0.831	-0 .174	-1.264	-0.674
Age	0.261	2.163	1.382	0.592
Fish ground	0.127	0 .116	0.751	0.041**
Distance Covered	0.506	0.374	3.780	0.057**
Household size	0.341	0.206	2.783	1.795
Years of Experience	0.591	0.276	2.731	0.041***
Season	0.228	0.103	5.232	0.002***

Source: survey data, 2012.

Notes: $R^2 = 0.76$, ***1% significant,**5% significant.

For fish marketers, about 72.0% of the changes in the dependent variable were accounted for by the postulated explanatory variables. The F value was significant at 5%. Among the postulated explanatory variables, cost of fish purchased for resale and years of marketing experience were significant at 1% level of significance while cost of transportation, quantity of fish sold and household size were significant at 5%. All the significant variables bore signs which conformed to a priori expectations. Cost of transportation, cost of other marketing functions and cost of fish purchased for resale had inverse relationship with the profit accrued to fish marketers while other parameter estimates showed directly proportional relationship

with profit as expected. The result suggested that increase in the cost of transportation and cost of fish purchased for resale by marketers negatively affected profit generated. The years of marketing experience was significant probably because experience confers marketers with better understanding of the dynamics of marketing which could translate to better returns on investment (Mafimisebi 2007; Mafimisebi et al., 2013).

The household size bore a positive sign as a reflection of how increase in the number of household members could positively influence profit. This is possible from the point of view that the bigger the size of the household, the more the available quantum of family labour needed to hawk and reach a greater number of potential customers for better patronage. Fish marketing in the study area usually involves the engagement of the children either to hawk or man the market stalls in the absence of their parents. The respondents attributed the low profit in fish marketing to the high number of people engaged in this line of trade in the study area. In their opinion, it is about the easiest and most convenient business to do hence making it attractive to many women.

Table 6: Results of Determinants of Returns from Fish Marketing

Variable	Coefficient	Beta	T	Significance
Constant	6.732	-	3.882	0.000*
Qty of fish sold	0.201	0.204	2.534	0.032*
Cost of Transportation	-0.263	-0 .174	-1.134	-0.049**
Cost of fish purchased for resale	-0.276	-0.263	-2.331	-0.005***
Cost of other marketing functions	-0.027	-0 .056	-0.425	-0.534
Household size	0.006	0.248	2.080	0.035**
Years of marketing experience	0.141	0.163	1.783	0.009***
Age	0.392	0.316	3.33	0.142
Level of Education	7.328	0.421	4.182	1.529

Source: survey data, 2012.

Notes: $R^2 = 0.72$, ***1% significant level, **5% significant level.

Contribution of Fisher Folks' and Fish Sellers' Income to Household Expenditure

The primary objective of the respondents' engagement in fish hunting and marketing is to make a living and sustain their livelihoods. Therefore, it was expected that respondents used a greater part of their profit to supplement household expenditure and ploughed the remaining back into their businesses. Table 7 showed the average contributions made by respondents in the two livelihood strategies to household expenditure. The table revealed that the fisher folks spent 77.8% of the profit on their fish hunting investment on supplementing household's expenditure and ploughed back 22.2%. The fish marketers

contributed 69.2% of the profit made from fish marketing on households' expenditure while 30.8% was re-invested.

Table 7: Share of Respondents' Earnings Devoted to Household Expenditure

Category of Respondents	Contribution to Household Expenditure (N)	Share of the Profit (%)	Plough back to Business (N)	Share of the profit (%)
Fisher folks	2,242,683.61	77.8	639,943.14	22.2
Fish marketers	443,037.08	69.2	197,189.92	30.8

Source: survey data, 2012.

4. Summary, Recommendations and Conclusion

The study compared the profitability of fish capture and fish marketing as women-dominated fish-based livelihood activities in Ondo State, Nigeria. About 38.0% of the fisher folk was less than 35 years while 50.0% of marketers was within the economically active age range (36-45 years). Majority of the respondents (74.0% of fisher folks and 100% of the marketers) were married. There was a higher level of literacy among marketers compared with fisher folks. A large number of the respondents engaged in fish capture and fish marketing considered their venture as major livelihood activity to which a greater part of the productive time is allocated. Fish hunting and fish marketing were identified by respondents as dependable sources of income for sustaining the livelihood of their households.

The net revenue accrued to fish hunters per annum was N2,882,626.75 while that of fish marketing stood at N 640,227.00 indicating that fishing and marketing of fish were profitable ventures with fishing being more profitable than fish marketing. On each N100 invested on fish hunting and fish marketing, N 53.20 and N 40.30, respectively, were returned. These returns are comparable to returns from other informal sector ventures in Nigeria. Interestingly, the respondents contributed a major part of the profit from their ventures towards household consumption expenditure while the balance was ploughed back for business expansion. This indicates that any step taken to increase the performance of these ventures will translate into better household welfare in the study area.

Increased cost of fishing canoes, short supply of fishing gears and baits, attack by dangerous animals such as snakes and wasps, destruction of fish traps by carnivorous animals that prey on live fish and poaching of fish traps by thieves were the major challenges faced by fish hunters. The major challenges faced by fish marketers included high cost of canoes and perishability of unsold fish. Both groups face lack of access to credit facilities to expand trade. The study concluded that fish capture and fish marketing were profitable ventures and that income realized made contributions to uplifting households' living standards. Policy makers are enjoined to consider helping women in informal sector ventures to

organize themselves into cooperative groups to empower and enable them access bank credit and own expensive capital assets like canoes, necessary for their ventures. Capacity building programmes directed at better business management, sustainable fishing, better preservation of unsold fish for sale in the dry form to enhance returns from the ventures, are important issues needing attention in improving business performance in these women-dominated ventures.

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