

Fish processing and marketing among women fish mongers in Ofu Local Government Area, Kogi State, Nigeria

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ABSTRACT: The study analysed fish processing and marketing among women fish mongers in Ofu Local Government Area of Kogi State, Nigeria. The specific objectives were to describe the socio-economic characteristics of women fish mongers, various processing activities carried out by women fish mongers in fish processing and marketing, costs and returns of women fish mongers, factors affecting the profitability of women fish mongers and constraints faced by the respondents in fish processing and marketing. A multi-stage sampling technique was used to randomly select a total of 120 respondents from three major markets from the Local Government Area. Primary data was used for the study through the use of a well-structured questionnaire. Data obtained was analysed using descriptive statistics, gross margin analysis, multiple regression model and mean score. Majority (75.0%) of the respondent were married with an average age of 43 years. Also, the results indicated an average household size of 6 persons per household and a mean marketing experience of above 10 years. Furthermore, 55.0% of the marketers had primary education. Sorting (100%), washing (100%), packaging (100%), smoking (100%), salting (82.50%), marketing (94.17%), transporting (98.33%), storage (91.67%), folding (93.33%) and slaughtering (72.5%) were major activities carried out by fish mongers. The total return for small fish was ₦12,580.55, ₦15,820.00 for big fish, and ₦20,250.55 for bigger fish per month. This indicates that an average fish monger earned ₦9,281.97 for small fish, ₦8,309.44 for big fish while ₦10,603.12 for bigger fish as gross margin per annum, suggesting that fish marketing is a profitable venture in the study area. Out of the five independent variables included in the model, marketing experience and household size had a significant influence on fish profitability. The major constraint is inadequate credit facility with a mean score of 3.0. Therefore, the Government should encourage fish mongers by giving them soft loans.

Keywords: Fish, fish mongers, marketing, Ofu Local Government, processing, women.

INTRODUCTION

Fish production and marketing is one of the oldest livelihood income generating activities of man since the time immemorial (Agbebi and Adetuwo, 2018). The Food and Agriculture Organisation reported that fish accounted for about one-fifth of world total supply of animal protein sources (Kolawole *et al.*, 2010). The quantity of fish consumption has increased five-fold, over the years resulting in world fish crisis. Fish are significant to the nation's economy in terms of food security, income, employment, poverty alleviation, foreign exchange

earnings and provision of raw materials for animal feed industries (Ovie and Raji, 2006). Fish is the commonest and cheapest source of protein for the teaming Nigeria's poor, estimated to be between 65-70% of the total population (Agbebi and Fagbote, 2012). The importance of fish in human's nutrition in particular and for animal feed (fish-meal) as well as for other purposes cannot be gainsaid (Abolagba, and Chukwu, 2008).

Fish is an important source of good quality protein required in human diets (Babalola *et al.*, 2015). 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 (Ayoola, 2010). Fish is important to the ever increasing world population, especially in most parts of Africa, Nigeria inclusive, as it is the major source of cheap high quality animal protein, contributing to the animal protein intake of the population especially in rural communities (Adekoya and Miller, 2004).

It has high content of polyunsaturated (Omega III) fatty acids, which are important in lowering blood cholesterol. FAO (2020) estimated global fish production at 179 million tonnes in 2018 with a total first scale value at USD 401 billion, of which 82 billion tonnes valued at USD 250 billion came from aquaculture production. The statistics also showed that 156 million tonnes of fish were consumed by humans which is equivalent to an estimated annual supply of 20.5 kg per capita, while the remaining 22 million tonnes were used for non-food purposes. Fish which contributes 36.6 grams per day of net protein utilization in Nigerian homes is still below the recommended requirement by the world health organization (WHO) (Ohen and Abang, 2019).

As important as fish is to Nigerian, high degree of fish spoilage still occur due to the absence of adequate processing and storage facilities and serves a major constraint to the development of fishing industry in Nigeria (Akinpelu *et al.*, 2013). According to Akinola *et al.* (2006) some of the different types of preservation methods employed to arrest fish spoilage include: drying, smoking, freezing, chilling and brining

Fish is more preferable to meat due to its nutritional and medicinal value especially when advancing in age (Ayo-Olalusi *et al.*, 2010). Increased fish production goes a long way in reducing the worrisome demand and supply gap in the nation. Muringai *et al.* (2022) stated that fish plays a crucial role in improving food and nutrition security in sub-saharan Africa and many scientific disciplines also concur to this view. In Agbebi's (2010) view, fish contains higher percentage of protein than meat and is important for its high nutritive value and significance in improving human health. Faced with increasing wealth, changing dietary patterns and urbanization, fish farming provides the key to meeting fish demand in the face of dwindling fish supply from captured sources.

Marketing is a process of exchanging goods and services from one person to another with reference to price (Eze *et al.*, 2010). A fish market is a place where fish and fish products are sold. However, fish marketing essentially consists of all the activities involved in delivering fish from one producer to the consumer. An efficient market system therefore is the one that provides satisfactory and cheap services to consumers or one that maximize the ratio of input and output of marketing (Ohen and Abang, 2007). In Nigeria, fish system varies depending on type of fish product and the distance between producer and source of supply of fish product and retailer and ultimately to

consumer. Fish supply and marketing suffer from various sets backs, ranging from shortage of supply, price fluctuation due to drying up of the source and spoilage in transit amongst others (Onubuogu *et al.*, 2014). Despite these, the agencies involved in the marketing of the commodity appear to be on the increase as a result of increase in the population and therefore, the demand tends to be high. Also, despite the nutritional and commercial values of fish and fish products, its production and marketing remains low in Nigeria when compared to other nations of the world (FAO, 2012).

According to Brouwer *et al.* (2022), women primarily engaged as fishmongers, processors and retailers. They solely handle the food processing and marketing sector of agriculture, including fish. Women are actively involved in food production, thus, making a way of escape from poverty and enhancing food security (Anyim *et al.* (2021). Anyim *et al.* (2021) also asserted that women contribution is very important in agricultural production systems including fisheries. Although, fish production customarily is men's venture, but women are engaged in fish related activities such as processing and marketing of fish and fish products (Akinrotimi *et al.*, 2011). According to FAO (2015), the majority of fish processing in Nigeria is done by women because of the low capital requirement of artisanal fishery economy. Agbontale *et al.* (2020), stated that considerable number of women are involved in fish processing and marketing adopting both modern and traditional fish processing methods.

The roles of women in food production, processing and marketing have become more relevant as a way of fighting poverty and ensuring food security (Ibrahim *et al.*, 2011). Women play a crucial role in fisheries; their main activities are processing and marketing of fish products (Paris and Chi, 2005). They also participate actively in the fish preservation on small scale basis, private and cooperative associations' levels (Oluwatoyin *et al.*, 2018). Despite the role of women in fisheries sub-sector, most developing countries like Nigeria, still practice patriarchal systems of social setting. In this tradition, men hold the sovereign power, control household and the society as a whole while women are ascribed to a lower hierarchy compared to men (Balk, 1997). The status of women in our society over the ages and all over the culture had always been considered inferior to men. They are regarded as weaklings capable of doing nothing except child bearing and home making (Enomouh, 1995). Therefore, considering these background information and the important roles performed by women especially in fishery ventures, this study centres on the analysis of fish processing and marketing among women fish mongers in Ofu Local Government Area, Kogi State, Nigeria. It answered the following research questions:

1. What are the socio-economic characteristics of women fishmongers in the study area?
2. What are the various processing/marketing activities

- carried out by women fish mongers in the study area?
3. What are the costs and returns of women fishmongers in the study area?
 4. What are the factors affecting the profitability of women fish mongers in the study area?
 5. What are the constraints faced by women fish mongers in the study area?

The following objectives were stated in order to answer the research questions

1. describe the socio-economic characteristics of women fish mongers in the study area.
2. identify various processing/ marketing activities carried out by women fish mongers in the study area.
3. estimate the costs and returns of women fish mongers in the study area.
4. determine the factors affecting the profitability of women fish mongers in the study area.
5. identify the constraints faced by women fish mongers processing in the study area.

METHODOLOGY

The study area

This study was carried out in Ofu Local Government Area (LGA) of Kogi State, Nigeria. The Niger River forming its western boundary. Its headquarters are in the town of Ugwalawo, the north easterly line of equal latitude and longitude passes through the LGA. It is one of the oldest Local Governments Area created on 11th May 1989 in Kogi State, Nigeria.

The Local Government Area is bounded to the North by Bassa and Dekina Local Government Areas, to the East by Ankpa and Olamaboro Local Government Areas, and to the South by Igalamela-Odolu Local Government Area, and to the west by the River Niger. The area enjoys both wet and dry seasons. The wet season lasts from April to October with a short break in the middle of August tagged (August break). The dry season lasts from November to March. The total annual rainfall ranges from 1000mm to 1500 mm. They are predominantly Igala speaking people. Food crops such as maize, cowpea, groundnuts, rice, cassava, melon, guinea corn, bambara nuts are grown in the LGA. Cash crops such cocoa, palm trees, including cashew and mangoes are also common in the area. Common minerals found in the LGA are marble, lime, kaoline, feldspars, galena. Ugbakoji hills at Itobe, Uloko Anao waterfalls at Ofokopi, Ala natural tunnel and Ofakete natural bridge are the common tourist centres in the LGA. Only few proportion of the residents engaged in white collar jobs and artisanship such as furniture, clothings, decorative arts, sculptures etc.

Population of the study and sampling technique

The population for this study comprises of women fish

mongers in Ofu Local Government Area, Kogi- State, Nigeria. . Multi-stage sampling techniques was adopted in this study. In the first stage, six districts was randomly selected from the LGA. In the second stage, one village from each of the districts was randomly selected. In the third stage, twenty (20) women fish mongers were purposively selected from each village, making a total sample size of one hundred and twenty (120) respondents. The primary data was collected using a well-structured questionnaire coupled with personal interview to elicit information from the respondents. Information obtained from respondents were based on the study objectives. The questionnaire was divided into five sections.

Method of data analysis

Data obtained was analysed using descriptive statistics, gross margin analysis, multiple regression analysis and mean score. The socio-economic characteristics of women fish mongers (objective 1), and activities carried out by respondents in fish marketing (objective 2) was achieved using descriptive statistical tools such as frequency count, mean, mode and percentages. The costs and returns on fish marketing (objective 3) was obtained through gross margin analysis. Gross margin is the difference between the gross farm income (GI) and the total variable cost (TVC). It is a useful planning tool in a situation where fixed capital is a negligible portion of farming enterprise as in the case of small scale subsistent agriculture. The following method was used:

$$GM = TR - TVC \dots\dots\dots (1)$$

The following Profitability ratios was calculated:

$$\text{Benefit Cost Ratio (BCR)} = \frac{TR}{TC} \dots\dots\dots (2)$$

$$\text{Rate of return (ROR)} = \frac{\text{Average Return}}{\text{Investment cost}} \dots\dots\dots (3)$$

Where: GM = Gross Margin (₦ /Kg), TR = Total Revenue (₦ /Kg), TVC = Total Variable Costs (₦ /Kg), TC = Total Costs

The factors influencing the profitability of fish marketing was achieved using multiple regression. A regression model shows a relationship between the dependent variable, Y and the independent variable (s), X(s). Xs jointly as a group explain the variation in the dependent variable, Y.

Model specification

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e_1 \dots\dots\dots (4)$$

Where: Y = average revenue; X₁ = age of marketer (years);

X_2 = household size (number); X_3 = marketing experience (years), X_4 = transportation cost (₦), X_5 = purchase cost (₦), e_1 = error term.

RESULTS AND DISCUSSION

Socio-economics characteristics of respondents

The results of the descriptive analysis in Table 1 showed that majority (75.0%) of the respondents in the study area were married, (19.17%) were widow while (5.83%) were widowed. This suggests that fish marketing in the study area is dominated by married women. Married people tend to have more household responsibilities than single people, thus pushing them to be more industrious and productive in their ventures in order to meet up with the demands of family. This is in agreement with Olagunju (2019), who opined that (82%) of the catfish marketers were married leaving a little proportion of (2%) and (16%) single and divorcees respectively. Similarly, Abolagba and Chukwu (2008), who revealed that majority of fish processors were married and went into fish business, because their husbands were fishermen and they have family responsibilities to shoulder.

The mean age of the respondents was 43 years. Akinrotimi *et al.* (2011) also revealed that majority of the respondents in their study were in their middle and active age of life. The age-range can be regarded as the youthful age where farmers can make vital impact on agricultural production and development in general. Younger people or youths tend to be more energetic, adjust faster, and adopt new technologies, thus may be more productive than the elderly who may be more conservative. This agrees with the findings of Adeyemo *et al.* (2011), who reported that the majority of catfish marketers fall within the age bracket of 35 - 55 years, hence could be regarded as young or youths.

Majority (49.0%) of the respondents had 6-10 persons in their household, (45.0%) had 1-5 persons, 5.0%) had a household size range of 11-15 persons, while 0.83% had 16-20 persons. The mean household size was 6 persons. This may be due to the fact that they want to take care of their large household. It is also expected that a household with higher household size is likely to have more helping hands in fish marketing. Catfish marketing which requires a great deal of human effort from stocking, routine management, to distribution will certainly benefit those from higher household size. This findings is in agreement with Olagunju (2019) who reported that majority of catfish marketers have household sizes within the range of 3 to 5 persons. This is also in line with Ali *et al.* (2008) who affirmed that the more the household size, the higher the productivity because they have more hands in the business.

Results showed that majority (55.0%) of the respondents had primary education, while (45.0%) had secondary

education. Clearly, the level of education among the respondents was high. Level of education plays an important role in influencing profitability of catfish marketing. Education plays a major role in acquiring more marketing skills that will improve and increase profitability as well as specific qualities that stratify people with higher socio-economic status from lower socio-economic status. This findings is in consonance with Hilborn *et al.* (2003) who reported that formal education had a positive and significant influence on the decision of farmers that led to higher productivity and profitability. Similarly, Olayemi *et al.* (2011) reported that higher levels of education are associated with better economic and psychological outcomes (i.e., more income, more control, and greater social support and networking).

The result showed that (50.0%) of the fish marketers had marketing experience ranged between 1-10 years, (29.17%) had 11-20 years, (18.33%) 21-30 years while (2.5%) had 31-40 years. The mean years was 11.4 years. This implies that the majority of the marketers have acquired high number of years of experience in fish marketing enterprise. Marketing experience is also very important as it gives more insight into the understanding of the dynamics of catfish marketing venture. It is expected that experienced marketers would be more profitable. This is in agreement with Ayinla (2004) who reported that fish marketing experience was a significant determinant of net income in catfish production.

Majority (80.0%) of the respondents had no access to credit while (20.0%) had access to credit. This indicates that majority of the fish mongers do not have a reliable source of credit. This result indicates that agricultural loans were not easily accessible to fish mongers in the study area. It is expected that access to agricultural loans will positively affect domestic food production and fish marketing enterprises resulting in food sufficiency and increased incomes. However, this finding is contrary to Awotide *et al.* (2015) findings, who reported that credit access has positive impact on agricultural productivity. Thus, the respondents in this study area couldn't expand their fish business beyond their financial scope.

Various processing/marketing activities by women fish mongers

The results of various processing/marketing activities are shown in Table 2. These activities carried out by the respondents were sorting (100%), washing (100%), packaging (100%), smoking (100%), salting (82.50%), marketing (94.17%), transporting (98.33%), storage (91.67%), folding (93.33%) and slaughtering (72.5%). This implies that women fish mongers in the study area were deeply involved in diverse activities in terms of fish processing and marketing. The results agrees with the findings of Akinola *et al.* (2006) who reported some of the different preservation methods employed in preventing

Table 1. Socio-economic characteristics of respondents.

Socio-economic	Frequency	Percentage	Mean/mode
Marital status			
Married	90	75.00	Married
Divorced	7	5.83	
Widow	23	19.17	
Total	120	100.00	
Age			
25-35	34	28.33	43 years
36-45	38	31.67	
46-55	31	25.83	
56-65	17	14.17	
Total	120	100.00	
Household size			
1-5	54	45.00	6 persons
6-10	59	49.00	
11-15	6	5.00	
16-20	1	0.83	
Total	120	100.00	
Qualification			
Primary	66	55.00	Primary
Secondary	54	45.00	
Total	120	100.00	
Marketing experience			
1-10	60	50.00	11.4 years
11-20	35	29.17	
21-30	22	18.33	
31-40	3	2.50	
Total	120	100.00	
Access to credit			
No	96	80.00	Yes
Yes	24	20.00	
Total	120	100	

Source: Field Survey, 2021.

fish spoilage, which include: drying, smoking, freezing, chilling and brining. The role of women in food production, processing and marketing has become more relevant as a way of fighting poverty and ensuring food security (Ibrahim *et al.*, 2011). Women also play crucial role in fisheries; their main activities are processing and marketing of fish products (Paris and Chi, 2005).

Costs and returns of respondents

The result of Gross margin analysis in Table 3, showed that the respondents expended ₦4,816.13 per month as

average total costs on small size fish marketing, ₦9,119.44 per month on big size fish marketing and ₦11,656.93 per month on bigger size fish marketing respectively. The average total returns for small size fish was ₦12,580.55 per month, ₦15,820.00 on big size fish and ₦20,250.55 per month on bigger fish respectively. This indicates that women fish mongers earned an average of ₦9,281.97 for small size fish, ₦8,309.44 for big size fish while ₦10,603.12 for bigger size fish as gross margin per month respectively. This suggest that fish marketing is a profitable venture in the study area. Benefit cost ratio (BCR) is 2.61 for small size fish, 1.73 for big size fish and 1.74 for bigger size fish. This implies that fish

Table 2. Processing/marketing activities carried out by women fish mongers in fish processing and marketing.

Activities	No. of respondents	Percentage	Remark
Sorting	120	100.00	1st
Washing	120	100.00	1st
Packaging	120	100.00	1st
Smoking	120	100.00	1st
Salting	99	82.50	9th
Freezing	23	19.17	11th
Marketing	113	94.17	6th
Transporting	118	98.33	5th
Storage	110	91.67	8th
Folding	112	93.33	7th
Slaughtering	87	72.50	10th

Source: Field Survey, 2021.

Table 3. Average costs and returns of respondents for different fish sizes.

Items	Small (₦)	Big (₦)	Bigger (₦)
Returns			
Unit of fish (basket)	12,580.55	15,820.00	20,250.55
A. Total Returns (TR)	12,580.55	15,820.00	20,250.55
Variable costs			
Purchase	2016.67	5975.00	7966.67
Transportation	144.58	218.17	262.50
Labour	249.17	400.55	480.50
Salting	83.58	87.67	94.42
Security	355.83	356.67	357.50
Haulage	100.00	112.50	124.58
Storage	137.08	137.92	137.92
Packaging	100.00	103.33	104.17
Firewood	111.67	118.75	119.17
B. Total Variable Costs, TVC	3,298.58	7,510.56	9,647.43
Fixed costs			
Depreciated value of fixed items	1,517.55	1,608.88	2,009.50
C. Total Fixed Costs, TFC	1,517.55	1,608.88	2,009.50
D. Total Costs, TC = TVC + TFC	4,816.13	9,119.44	11,656.93
E. Gross Margin, GM = A – B	9,281.97	8,309.44	10,603.12
F. Profit = A – D	7,764.42	6,700.56	8,684.62
G. BCR = A/D	2.61	1.73	1.74

Source: Field survey, 2021.

marketing for different fish sizes are viable and profitable among women fish mongers in the study area. Osundare and Adedeji (2018) also reported the profitability of fish marketing in their study in which fish marketers earned an average of ₦27,458.28 as gross margin per year. This findings concur with findings of Adeleke and Afolabi (2012) who reported that fresh fish marketing is a profitable venture with return on investment (ROI) of 0.14 indicating that for every ₦1.00 spent on fresh fish marketing, 14 kobo was gained by the marketers.

Factors affecting the profitability of women fish mongers

The results of regression analysis in Table 4 showed that the output of the semi-log model with an R^2 value of 0.5868 implies that 58.7% of the change in total profit of fish mongers in the study area was explained by the independent variables (age of fish mongers, household size, level of education, marketing experience and cost of transportation) and the remaining 32.38% are embedded

Table 4. Estimates of the regression results on the factors affecting the profitability of women.

Variables	Coefficient	Std. Error	t	P> t
Age	0.0002353	0.0165196	0.01	0.989
Household size	2.114006	0.2676423	7.90	0.000***
Marketing experience	0.5140366	0.962415	5.34	0.000***
Purchase cost	0.0173242	0.0119376	1.45	0.149
Transportation cost	-0.0003847	0.0041839	-0.09	0.927
Constants	21.5353	26.08647	0.83	0.411
Number of obs.	120			
Prob > F	0.0000			
F (5, 114)	32.38			
R –Squared	0.5868			
Adj R-squared	0.5687			
Root MSE	6.5733			

*** = 1% level of Significant (**Source:** Field Survey, 2021).

Table 5. Mean score of the constraints faced by women fish Mongers.

Constraints	VS	S	NS	TSS	MS	Remark
Inadequate capital	120	0	0	360	3.00	Serious
Far market	1	119	0	241	2.01	Serious
Inadequate extension service	0	120	0	240	2.00	Serious
Inadequate market	0	3	117	123	1.03	Not Serious
Heat and Smoke	1	119	0	241	2.01	Serious
Seasonality	0	8	112	128	1.07	Not Serious
Inadequate Transportation	0	118	2	238	1.98	Not Serious
Infrastructural problem	3	115	2	241	2.01	Serious
Poor pricing	116	4	0	356	2.97	Serious
Inadequate market information	0	119	1	239	2.00	Serious
Inadequate processing skills	0	119	1	239	2.00	Serious
Lack of storage facilities	3	117	0	243	2.02	Serious
High cost of feed	115	5	0	355	2.96	Serious
Health Hazard	0	120	0	240	2.00	Serious

Decision rule: Any mean score above or equal to 2.0 is a serious problem. VS = Very serious, S = Serious, NS = Not serious (**Source:** Field Survey, 2021).

in the error term, which implies that there are some variables of interest which were not captured in the model. The results showed that marketing experience and household size were the determinants of fish marketing profitability among other factors in the specified model.

The coefficient of household size positively influence the profits of fish women mongers and was significant at 1%. This implies that the larger the number of household, the more helping hands for the women fish mongers in their business.

The coefficient of marketing experience is positive and significant at 1%. This implies that fish mongers with more years of marketing experience are expected to be more efficient. It is possible that such marketers gained more marketing experience through “learning by doing” and thereby becoming more efficient. Experience gave positive and significant coefficient, indicating that increase in years

of experience will result in increase in the volume of fish marketed by the rural assemblers which may also increase their profits. The result agrees with similar findings by Adeleke and Afolabi (2012) that marketing experience is a significant factor in increasing sales of revenue.

Constraints faced by the respondents in fish processing and marketing

The results in Table 5 showed that inadequate capital is the major constraint (mean score = 3.0) facing the respondents in the study area. This implies that inability to access credit and inadequate capital are major setbacks to fish marketing in the study area, since money is needed for the day-to-day running of the business. Similar finding was reported by Onubuogo *et al.* (2014).

The high cost of feed (mean score = 2.96), lack of storage facilities (2.02) were also among the constraints to fish marketing in the study area. The importation of most commercial feed into the country and problems associated with importation and distribution could be the main reasons for the hike in feed fish. These commercial feed possess floating and high protein qualities and are therefore preferred by fish. Ugwumba and Nnabuike (2008) also identified high cost of feed as serious setback to profits realizable from fish farming.

Poor pricing (mean score = 2.97), inadequate extension service (mean score = 2.0), inadequate processing skills (mean score = 2.0), far market (mean score = 2.1) and infrastructural problem (mean score = 2.01) were constraints facing women fish mongers in the study area. These imply that there were numerous constraints facing fish mongers in the study area. Ansa (2014) noted that despite the profitability of the fish enterprise, fish mongers are still poor and sell their products below its value. The problems most fish mongers encountered, according to Ali *et al.* (2008) were lack of market orientation and most fish mongers are not market-wise oriented, this make them to face many difficulties in marketing (Ali *et al.*, 2008). Lack of skill make the fish mongers undergo much stress and make them feel that marketing of fish is a difficult task (Adewumi and Olaleye, 2011). Similarly, Nwabueze and Nwabueze (2011) identified transportation cost as a major constraint to fresh fish and live-fish marketing.

Conclusion and Recommendation

This study analyses fish processing and marketing among women fish mongers in Ofu Local Government Area of Kogi State, Nigeria. The study found out that women fish mongers in the study area were married, educated, and well-experienced, with low access to credit for better business expansion. Also, sorting, washing, packaging, smoking, salting and others were the processing/marketing carried out by women fish mongers in the study area. Furthermore, fish marketing was found to be profitable among the respondents, while the household size and marketing experience were the factors affecting profitability. Lastly, inadequate capital is the major constraint among others faced by the fish mongers in the study area. Therefore, the study recommends the following;

1. Extension services should be harnessed towards training of women fish mongers on acquiring modern skill in fish processing and marketing in the study area.
2. Women fish mongers should be encouraged to form cooperative societies in order to generate more capital for funding their activities and for purchasing processing/storage facilities.
3. Government can also give soft loan or subsidy to encourage women fish mongers in the study area.
4. There is need for fish price control based on various

sizes to prevent excess profit and losses by the women fish mongers in the study area.

5. Markets places should be constructed nearer to the women fish mongers for effective fish marketing in the study area.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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