CONTRIBUTION OF WOMEN FISH MERCHANTS IN ARTISANAL FISHERIES DEVELOPMENT IN OGUN WATERSIDE LOCAL GOVERNMENT AREA, OGUN STATE

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Abstract
This study investigated the contribution of women fish merchants (WFMs) in artisanal fisheries in Ogun Waterside Local Government Area, Ogun State. A two-stage sampling procedure was used to select 120 fish mammies from four purposively selected fishing communities. Data were collected with the aid of interview guide and analyzed using descriptive and inferential statistics. Results revealed that the mean age and household size of WFMs were 54.01±8.61 years and 12±4 persons respectively. Majority of the WFMs had their goals on profit-making (99.2%), high turnover/quick return from investment (98.3%) and self-employment (89.2%). Major roles played by the WFMs were provision of fishing nets (99.2%), sales of fish catch (98.3%), supply of fishing gears (97.5%), and have control over the fish catch (98.3%). The mean values indicated that high cost of fishing equipment (mean=2.96), and distance of financial institution (mean=2.58) were the most important constraints facing artisanal fisheries. Women Fish merchants' family type showed a significant association with the roles they played in artisanal fishery enterprises (χ^2=9.526, p<0.05). This study concluded that WFMs had contributed to artisanal fisheries through social and economic supports to fisher folks. It is recommended that financial institutions should be established in fishing communities.

Keywords: Artisanal enterprise, Credit provision, Fishing roles, Fish mammy, Fish production, Investment portfolio

Introduction

Fishery is one of the key sub-sectors of Nigerian agriculture through the production of fish as it contributes significantly to the nation's GDP making up about 3 percent of the agriculture's contribution (Central Bank of Nigeria - CBN, 2010). The importance of fish has been well documented in academic and non-academic research presentations, seminars, conferences and workshops as well as review of literatures. Fish is noted to provide high quality protein, vitamins and minerals (Leech, 2015). Fish is essentially a cheaper protein source to the poor who mostly rely on starch diets and unable to afford animal protein sources such as beef, mutton and meat (Tidwell and Allan, 2001; Akinrotimi *et al.*, 2007). Fisheries are also a good source of income to millions of Nigerians who rely on it through its employment generation. It therefore has a tendency to eradicate poverty, and reduce hunger and their consequences such as malnutrition by ensuring food and nutrition security.

The fish need in Nigeria is supplied through two main sources which are domestic production of fish and importation of fish (Olaoye, 2010). Domestically, fishes are produced through artisanal fisheries, aquaculture and industrial fisheries and artisanal fisheries has been reported to contribute most to local fish production in Nigeria. For instance, artisanal fisheries was reported to contribute at least 70 percent of fish produced in Nigeria and generate employment opportunities to majority of the inhabitants of fishing communities which are usually rural (NBS, 2017; Olaoye, 2010; FDF, 2008).

Although, men have been reported in literatures as key actors in artisanal fishing and the fisheries sector at large, the role of women and children cannot be underestimated. Traditionally, women in southwest, Nigeria are restricted to the households carrying out domestic chores as well as performing child bearing and rearing roles while involvement in economic activities are the discretion of their husbands (De and Pandey, 2014). Most of the time they work under their husbands as assistants receiving no pay for the services they rendered. The implication is that although the women assist their husbands, they do most of the works in fishery whereas the men are engaged primarily in fish catching and transportation from the water bodies (streams, rivers, etc) to the landing sites. The women are mostly engaged in transporting the catches from landing sites to their home, and then continue with all postharvest and fish handling activities such as fish processing, marketing and distribution. However, despite the pivotal role of women in food security, they have remained quite invisible and their roles found to be under-reported and documented (Bolarinwa, 2017). Bolarinwa (2014) also noted that any society that is seriously committed to raising the standard of living needs to

consider women, not as marginal to development but as essential human resources.

Recently, with different campaigns on gender equality and development in order to eradicate poverty and reduce hunger among people irrespective of their gender, the need for every family member to contribute to household income become a necessity which led everyone to actively engage in at least one income-generating activity. In fishery, although scanty, there is an increasing recognition of the roles of women in the fish value-chain. The role of women in artisanal fisheries has gone beyond acting as fish processors, marketers and distributors in Nigeria, especially in the southern part of the country. They now work independently as fish mammies who act not only as important intermediaries between the fish producers and consumers but also by financing the fishermen either by buying fishing equipment for them or loaning them money to start their business; and they do control the sales of catches being harvested by the fishermen. Fishing communities in Ogun Waterside LGA are one of the few areas in Ogun State where women fish merchants, also known as fish mammies, are playing significant roles in the fish value chain. Key challenges faced in artisanal fishery enterprises especially those operated by women are access to credit facilities, unavailability of start-up capital, inadequate processing, transport and storage facilities, as well as inadequate medical services. These burdens are gradually being lessened with the help of fish mammies in the study area.

Also, information on women's roles as merchants in the different sectors of fish production is still scanty and just growing. This study therefore contributed to the growing body of knowledge by assessing the contributions of women fish merchants (WFMs) in artisanal fisheries enterprises in Ogun Waterside local government area of Ogun State. The specific objectives were to ascertain the socio-economic profile of the fish mammies in the study area; determine the goals of fish mammies in fish production; identify the roles played by WFMs in fish production; and determine the challenges facing fish mammies in performing these roles. The study's hypotheses were that i) there is no significant association between WFMs' socio-economic characteristics and their roles in artisanal fishery, and ii) there is no significant difference in the roles of WFMs across the study locations.

Materials and Methods

The study was conducted in Ogun Waterside local government area (LGA) which is one of the 20 LGAs in Ogun state and has its headquarters at *Abigi*. It shares boundaries with Ondo State in the North and Lagos State in the South and East Local Government in the West. The main towns are *Iwopin, Ibiade, Abigi, Efire, Ilushin, Makun-omi, Ode-omi,* and *Lomiro*. These towns consist largely of Yoruba speaking people. It has an area of 1,000 km^2 and a population of 72,975 as at 2006 census National Population Commission - NPC, 2006).

A two stage sampling procedure was adopted in this research. The first stage involved the purposive selection of four of the fishing communities in the LGA based on their scale of fishing and concentration of fish mammies as hinted from the information obtained from fisheries extension personnel. The purposively selected fishing communities are *Iwopin, Agbalegiyo, Makun-Omi,* and *Ode-Omi*. The second stage involved the random selection of about 60% of the fish mammies in the different fishing communities. About 120 out of a total of 200 fish mammies in the four fishing communities serve as the sample size for this study.

Instrument for data gathering in this study was the interview guide. Copies of the interview guide consisting of four sections viz socio-economic profile of fish mammies, goals of fish mammies, roles of fish mammies, and constraints faced by fish mammies in artisanal fishery enterprises were used to elicit information from the fish mammies. Items in the interview guide were written in English Language and translated to Yoruba and their responses were recorded by the researcher and research assistant trained for this purpose. Gathered data were entered into the Statistical Package for Social Sciences (SPSS) version 17.0 and subjected to descriptive and inferential statistics. The descriptive statistics used include frequency, percentage, mean and standard deviation while Chi-square and Analysis of Variance (ANOVA) were the inferential statistics used in the study.

Results

Socio-economic profile of the women fish merchants

The socio-economic profile of the women fish merchants is as presented in Table 1. More than half (56.7%) of the WFMs were older than 50 years while 38.3% of them were 41-50 years. The mean age was 54.01±8.61 years. The marital status indicated that majority (78.4%) of the WFMs were married while the remaining were either divorced (3.3%), widowed (15.0%) or separated (3.3%). Also, more than two-thirds (68.7%) of the WFMs were from polygamous family structure whereby their husbands married more than one wife while 31.7% were from the monogamous family structure. More than half (50.8%) of the WFMs were from households with family size of 11-15 persons while 44.2% and 5.0% of the WFMs had household sizes of 6-10 and 1-5 persons respectively. The mean household size was 11.92±3.894 persons. With respect to educational attainment, Table 1 reveals that 15.0% of the WFMs had no formal education while about 44.2% and 40.8% of them had their

highest educational levels as primary and secondary educations respectively. More than half (55.8%) of the WFMs practiced Christianity while the remaining 44.2% were Muslims practicing Islam.

Table 1: Distribution of women fish merchants by their socio-economic profile

Socio-economic variables	Frequency	Percentage	Mean±SD
Age (years)			
≤30	1	0.8	
31-40	5	4.2	54.01±8.61 years
41-50	46	38.3	
>50	68	56.7	
Marital status			Na
Married	94	78.4	
Divorced	4	3.3	
Widowed	18	15.0	
Separated	4	3.3	
Family structure			Na
Monogamy	38	31.7	
Polygamy	82	68.7	
Household size (number of persons)			
1-5	6	5.0	
6-10	53	44.2	12±4 persons
11-15	61	50.8	
Educational attainment			Na
No formal education	18	15.0	
Primary education	53	44.2	
Secondary education	49	40.8	
Religion			Na
Islam	53	44.2	
Christianity	67	55.8	

Na = Not applicable

Goals of fish merchants

Fig. 1 reveals that majority of the WFMs started with the goal of making profit (99.17%), diversifying investment portfolio (70.83%), meeting family needs (73.33%), high turnover/quick return from investment (98.33%) and 89.17%.

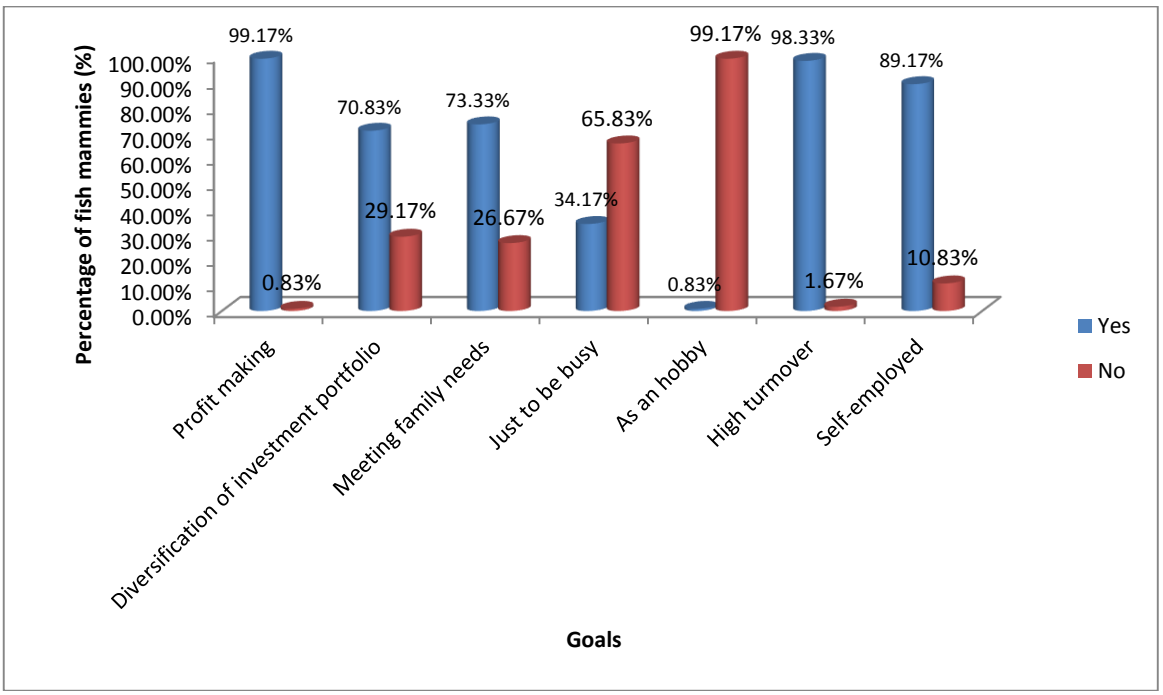

Fig. 1: Goals of WFMs

Roles of women fish merchants in artisanal fishery

Table 2 contains the roles played by WFMs in artisanal fishery enterprises are detailed in Table 2. It shows that all the WFMs (100.0%) always provide finances to artisanal fisher folks. Also, almost all the WFMs were always involved in the provision of fishing nets (99.2%), sales of fish catch (98.3%), supply of fishing gears (97.5%), and have control over the fish catch (98.3%). Also, majority of the WFMs occasionally engaged in the supply of food items to fishermen (83.3%), fish smoking (87.5%), providing fisher folks with medical facilities (93.3%), provision of storage facilities (93.3%), and ensuring that fish gets to the final consumers (96.7%). The mean values ranked the WFMs' roles in artisanal fishery enterprises recognized finance provision first (mean = 2.00), followed by provision of fishing nets (mean = 1.99), sales of fish catch (mean = 1.98), supplying of fishing gears (mean = 1.98) and control over fish harvest (mean = 1.98).

Table 2: Roles performed by women fish merchants in artisanal fishery enterprises

Roles of WFMs	Frequency			Mean	Ranking
	Always	Occasionally	Never		
Provision of Finance	120 (100.0)	0 (0.0)*	0 (0.0)	2.00	1st
Provision of Fishing net	119 (99.2)	1 (0.8)	0 (0.0)	1.99	2nd
Have full control over the fish harvest	118 (98.3)	2 (1.7)	0 (0.0)	1.98	3rd
Sales of fish catch	118 (98.3)	1 (0.8)	1 (0.8)	1.98	3rd
Supply of fishing gears	117 (97.5)	3 (2.5)	0 (0.0)	1.98	3rd
Marketing of fish catch	64 (53.3)	50 (41.7)	6 (5.0)	1.48	6th
Support during social activities	53 (44.2)	66 (55.0)	1 (0.8)	1.43	6th
Supply of food items to fishermen	13 (10.8)	100 (83.3)	7 (5.8)	1.05	11th
Fish smoking	13 (10.8)	105 (87.5)	2 (1.7)	1.09	10th
Provide fisher folks with medical facilities	3 (2.5)	112 (93.3)	5 (4.2)	0.98	14th
Purchasing of outboard engine	64 (53.3)	8 (6.7)	48 (40.0)	1.13	8th
Purchasing of canoe	60 (50.0)	16 (13.3)	44 (36.7)	1.13	8th
Provision of storage facilities	5 (4.2)	112 (93.3)	3 (2.5)	1.02	12th
Ensure fish get to the final consumer to time	3 (2.5)	116 (96.7)	1 (0.8)	1.02	12th

***Figures in parentheses are expressed as percentages**

Constraints facing women fish merchants

As shown in Table 3, high cost of fishing equipment was considered a very serious constraint by majority (97.5%) of the WFMs. More than half of the WFMs also considered insufficient fish catch (60.0%), distance of financial institutions (58.3%) and inadequate transport means (54.2%) as very serious constraints hindering from performing effectively in artisanal fishery enterprises. Weather condition (63.3%) and limited access to resources (98.3%) were considered as moderately serious constraints by 63.3% and 98.3% of the WFMs respectively. The mean values also ranked high cost of fishing equipment first among the constraints (mean = 2.96). This is followed by distance of financial institution (mean = 2.58) and insufficient fish catch (mean = 2.56) which ranked second and third most serious constraints respectively. Unfaithfulness of fishermen (mean = 0.99) and inconsistency of buyers (mean = 0.98) were the least ranked among the WFMs and also not considered as constraints to the WFMs.

Table 3: Constraints facing women fish merchants in artisanal fisheries

Constraints faced by women fish merchants	Level of severity				Mean	Rankings
	Very serious	Moderately serious	Serious	Not serious		
Unfaithfulness of fisher folks	0 (0.0)*	1(0.8)	117 (97.5)	2 (1.7)	0.99	7th
High cost of fishing equipment	117 (97.5)	1(0.8)	2 (1.7)	0 (0.0)	2.96	1st
Insufficient fish catch	72 (60.0)	41(34.2)	5 (4.2)	2 (1.7)	2.53	3rd
Distance of financial institution	70 (58.3)	50 (41.7)	0 (0.0)	0 (0.0)	2.58	2nd
Weather condition	41 (34.2)	76 (63.3)	1(0.8)	2 (1.7)	2.30	5th
Inconsistency of buyers	0 (0.0)	0 (0.0)	117 (97.5)	3 (2.5)	0.98	8th
Limited access to resources	2 (1.7)	118 (98.3)	0 (0.0)	0 (0.0)	2.02	6th
Inadequate transport means	65 (54.2)	54 (45.0)	0 (0.0)	1(0.8)	2.53	3rd

***Figures in parentheses are expressed as percentages**

Association between women fish merchants' socio-economic characteristics and their roles in artisanal fishery

It was established in Table 4 that of the six socio-economic variables considered in this analysis, only the WFMs' family type showed a significant association with the roles they played in artisanal fishery enterprises ($\chi^2 = 9.526$, $p = 0.0468$).

Table 4: Chi-square analysis of the association between women fish merchants' socio-economic characteristics and their role in artisanal fishery enterprises

Variables	χ^2-value	df	p-value	Decision
Age	7.381	3	0.061	Not Significant
Marital Status	1.917	3	0.590	Not Significant
Family structure	9.526	1	0.047	Significant
Household size	1.763	2	0.414	Not Significant
Educational Status	3.806	2	0.149	Not Significant
Religion	0.441	1	0.507	Not Significant

χ^2 = Chi-square, df = degree of freedom

Test of difference in the roles of women fish merchants across the study locations

The result of analysis of variance (ANOVA) presented in Table 5 reveals that significant difference exists in the roles performed by WFMs in the different fishing communities ($F = 10.900$, $p < 0.01$).

Table 5: Analysis of variance on the difference in the roles performed by women fish merchants across the fishing communities

	Sum of squares	df	Mean square	F-value	p-value	Decision
Between groups	681.145	3	227.048	10.900	0.001	Significant
Within group	2416.322	116	20.830			
Total	3097.467	119				

df = degree of freedom

Discussion

Considering the respondents age distribution, the study revealed that the WFMs were ageing, although still within the economic active work force of the population. With this population, both the fishers and consumers could benefit as distribution of fish could be ensured through the active nature of the WFMs. The marital status of the WFMs is also an indication that the WFMs were responsible person as marriage is associated with responsibilities and commitments on married individuals (Oladoja *et al.*, 2008). Ekong (2003) also observed that marriage is highly cherished in southwestern Nigeria. The dominance of married women as WFMs is an indication of the active roles of women in ensuring food security, income generation and reduced feminine vulnerability within the family. The polygamous family structure revealed could explain how marriage is cherished to the extent that more than one woman could marry a man. Being in a polygamous family could be a blessing to the WFMs as there could be more hands to assist them in their activities. Large household size was deduced was a prominent feature of the households in the study area. This could be of advantage to the WFMs as the family members could assist as cheap source of labour. Low level of education was inferred among the WFMs. This has a tendency to affect their ability to expand their business as improved technologies are less likely to be adopted by the WFMs. This supports the submission of Williams (2006) and Ovie and Ovie (2010) that majority of female fisher folks were illiterates. Bolarinwa (2017) also reported lack of basic education as a major constraint to women involvement in the fishing industry. Education is a good determinant of adoption of improved technologies by farmers (Olaoye, 2010).

The most common motivating factors for WFMs' involvement in artisanal fisheries as found from the study were profit making, high turn-over and desire to be self-employed. With these goals, WFMs have contributed and are still contributing to fisheries development in the study area. The profit-oriented motive could come as a result of the interest that accrues to them for financing fisher folks. Ben-Yami (2013) while commenting on the significance of WFMs opined that WFMs do finance the fishermen's gear and fuel. Through these goals, the WFMs could acquire power and ranks in addition to their acquisition of assets. This is in agreement with the views of Udong *et al* (2010) who observed that through profits acquired in the fish trade, women were able to acquire not only assets but power, rank, skills and recognition. This is therefore a means to achieving women empowerment.

The goals of diversifying one's investment portfolio, meeting family needs and self-employment could be attributed to the changing gender roles in Nigerian societies. Traditionally, it is the primary role of a man to provide all the family needs to all family members but this is changing as it is a common practice for women to be abandoned by their husbands who were supposed to provide their needs. Women now play active role in providing their own needs as well as those of their children especially in polygamous families. This is in tandem with the submission of Eboiyehi et al. (2016) that "husbands are no longer living up to their responsibilities".

The roles played by the WFMs in artisanal fishery enterprises included social and economic supports which are good pointers to ensuring that the continuous supply of fish to the consumers can be ascertained if they keep performing these roles. Overa (1993) reported that WFMs have played significant part in Bonga fisheries in Ghana. Udong *et al.* (2010) stated that WFMs are women who act as marketing agents responsible for selling fish to wholesalers and processors, advancing money to fishermen for fishing inputs, and equipping the boats with food and fuel needed for fishing trips. While commenting on the roles of WFMs as financiers, Overa (2003) opined that the production and marketing sectors are now filled by women entrepreneurs who serve as intermediaries providing financial assistance to both the fishermen and the fish traders in the absence of formal financing institutions such as commercial and micro finance banks. It was also reported that WFMs do lend money and inputs to the fishermen, equip the boats with supplies of food and fuel, while the rich ones among them also sponsor poor fish traders and new entrants by buying them fish to process and sell (Udong *et al.*, 2010). Essien and Effiong (2010) also reported that WFMs alongside the fishermen, have enriched the diets of the Nigerian fish-consuming public with important minerals and vitamins such as thiamine, riboflavin, vitamins A and D, phosphorus, as well as calcium, iron, polyunsaturated fatty acids, protein, etc. The findings from this study also confirm that women play significant roles in the fishing business. For instance, Ben-Yami (2013) regarded women as the ones that hold the purse in fishing communities.

The findings from this study are in consonance with earlier reports on women's involvement in fisheries activities. Such reports include Cliffe and Akinrotimi (2015) who reported lack of credit facilities and poor transportation networks as the most important constraints facing women involvement in fishery activities in coastal communities of Rivers State. Bolarinwa (2017) also identified restricted access to credit, dearth of social and infrastructural facilities, lack of basic education, and lack of land ownership amongst the constraints facing women involvement in fishery. Iruonagbe (2009) summarized the constraints facing women involvement in agricultural production to include legal and customary constraints on land ownership and access to credit; work burdens on women in addition to farming, including household management, water and fuel wood collection, and cultural constraints on women's use of land for agricultural purposes.

Although the WFMs are faced with certain constraints that prevented them from contributing more efficiently and effectively, attitudes of the fishermen and buyers were considered not to be a problem and this could be a good omen for artisanal fishery enterprises as the WFMs could easily overcome the serious constraints over time with aids from governmental and non-governmental agencies. It could be deduced that the roles played by the WFMs differed based on their family type as those from polygamous families were likely to perform roles that may be more labour demanding and yield more income to cater for the entire household members. While WFMs might have been very active in some fishing communities, WFMs in other communities may not be able to perform these roles due to constraints such as inadequate transport means, limited access to resources, and distance to financial institutions.

Conclusions

The findings of this study concluded that the women fish merchants had contributed to artisanal fisheries through social and economic supports to fisher folks. They provided fisher folks with finance, fishing nets, fishing gears, sales of fish, and control over fish harvest. The women fish merchants also engaged in the supply of food items to fishermen, fish smoking, and provision of medical facilities, storage facilities, and ensuring that fish gets to the final consumers. The roles played by the women fish merchants also differ among communities based on the needs of the fisher folks.

For women fish merchants to continuously contribute to artisanal fisheries there is the need for them to overcome certain constraints. The study therefore recommends that: improved fishing technologies should be developed by research institutes and disseminated by fisheries extension agencies at low cost in order to overcome the challenges of high cost of fishing equipment. This might also lead to an increase in fish catch. Financial institutions should be located in fishing communities in order to bring financial services close to the women fish merchants, and other members of fishing communities. This will cause a reduction in the cost of procuring loans. Equitable access to productive resources should also be put in place by the government through policies and programmes discouraging inequalities associated with gender. To do this, women should be allowed

to own and have control over productive resources such as land, labour, and credit facilities. Women fish merchants should continue to contribute to fisheries development in their respective fishing communities through the demand-driven approach which is based on the needs of the fisher folks in the communities.

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