

ASSESSMENT OF WOMEN INVOLVEMENT IN ARTISANAL FISHING IN OGUN WATERSIDE LOCAL GOVERNMENT AREA OF OGUN STATE

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Abstract

The study assessed women involvement in artisanal fishing in Ogun Waterside Local Government Area of Ogun State with a view to investigate constraints and level of women involvement in fishing. Structured interview schedule was used to collect data on women socio-economic characteristics, involvement, its extent, sources of information available to women and constraints associated with women involvement in artisanal fishing. Two-stage sampling procedure was employed to select 30% of the four hundred and fourteen (414) women involved in artisanal fishing in the study area. This produced a total of one hundred and twenty four (124) respondents which constituted sample size for the study. Women were involved actively in fishing activities but mostly in processing (1.18). Sources of artisanal fishing information were friends and family (1.60), middlemen (1.58) while constraints associated with women involvement in artisanal fishing includes highly laborious (2.77), lack of access to resources (2.22), among others. There was significant relationship between women involvement in artisanal fishing and socio-economic characteristics such as age ($\chi^2=9.709$), experiences ($\chi^2=12.643$), formal education ($\chi^2=21.021$), household size ($\chi^2=25.227$), income ($\chi^2=26.667$) and primary occupation ($\chi^2=17.763$). Also, sources of information such as membership of artisanal fishing association ($r= 0.418$), middlemen ($r= -0.442$), friends and family ($r= -0.215$) and constraints namely; lack of access to credit and finance ($r= 0.270$), male dominant society ($r= 0.2565$) and lack of access to resources ($r= -0.202$) had significant relationship with women involvement in artisanal fishing. Conclusively, women involvement in artisanal fishing was low and varied significantly with membership of association, middlemen, friends and family and access to resources. The study recommends that women should be supported to form groups and in capacity building to have adequate access to resources for enhanced participation in fishing activities.

Key Word: Assessment, Women Involvement, Artisanal fishing, Ogun Waterside

Introduction

Women have the highest participation rate in agriculture of all regions in the world (Odili *et al.*, 2012). It is also important to note according to FAO (2011) that women comprised about 43% of the global agricultural labour force, especially in developing countries. Their contribution to agricultural output is undoubtedly extremely significant, as women produce 60- 80% of food in agriculture. This important role however is difficult to quantify with some level of accuracy (Olapade and Sesay, 2019).

Traditionally, the work of rural women is mostly confined to the homestead due to cultural, religious and social restrictions. In male dominated family, female members depend upon the earning of men. Therefore, almost all economic decision is ordinarily taken by men. In rural areas role of women has always been supplementary to that of bread-winner, although they contribute substantially to the family.

Fish is an aquatic animal which serves as sources of food, nutrition, income and livelihood for millions of people in the world (Endalew *et al.*, 2020). Nigeria consumes over 1.5 million tons of fish annually (Ozigbo *et al.*, 2014). Fish constitutes approximately half the animal protein in the typical Nigeria's diet (Abolagba and Akise, 2011). Artisanal fishery is referred to as traditional or small-scale fishing which is characterized by those fishery activities which are mainly non-mechanized, but with low level of production (Inoni and Oyaide, 2007). Artisanal fishery is the predominant fishing in tropical developing countries. In Nigeria for example, the coastal artisanal fishery make use of traditional dug-out canoes, ranging from three to eighteen metres in

length, while the gears used include cast nets, hand lines, baskets, traps, long lines, set gill nets and beach and purse seines. Artisanal fishing includes coastal, brackish water and all inland fishery sources such as rivers, reservoirs, dams, lakes, lagoons as well as other major rivers in Nigeria (Nlerum and Bagshaw, 2015).

Artisanal fishing accounted for more than 80% of the total fish production in Nigeria for 20 years from 1985-2005, while aquaculture accounted for less than 8% of the production and industrial fishing fluctuates with a peak of 13.9% and minimum of 5% for the period under review (Onoja and Emodi, 2011). Although artisanal fishery production is the main stay of Nigeria domestic fishing industry, researchers have paid little attention to the experiences of the artisanal fisher folks (Nlerum and Bagshaw, 2015) and especially the role played by women in its development. Although, fish production is traditionally considered a masculine enterprise, women's role in fishing is complementary and important. The fishing activities of women include unloading of fish from landing canoes, fish processing, fish marketing, actual fishing of marine food resources, production of fish drying cards, canoe hiring and sale of fishing gears (Olaoye *et al.*, 2019).

Notwithstanding the role and huge contributions of women, they have continued to be marginalized all over the world, more importantly in development issues (Chando, 2002), a situation that has led to underperformance of the agricultural sector in many developing countries. However, studies have been conducted on fish farming and artisanal fishing in Ogun State (Olawunmi *et al.*, 2010; Olaoye *et al.*, 2011; Oladoja and

Adeokun, 2013; Olaoye, 2015), but there seems to be dearth of research in relation to women participation in artisanal fishing. Many of the agricultural programs and policies lack strategies for women. This is because the involvement of women in aquaculture development is influenced by cultural and social issues. Therefore, this study assessed women involvement in artisanal fishing in Ogun Waterside Local Government Area of Ogun State.

Methodology

Study Area

Ogun Waterside is a Local Government Area in Ogun State, Nigeria. It is the only area of the state with a coastline on the Bight of Benin and also borders Lagos Lagoon. Its headquarters are in the town of Abigi. Ogun Waterside has an area of 1,000km² and an estimated population of 103,200 and resulting in a population density of 103.2/km². The population growth rate is +3.35% per year. It is bordered by Ijebu East local government to the Northwest, Odigbo, Okitipupa and Ilaje local government areas of Ondo state to the Northeast, East and Southeast respectively, Epe local government of Lagos state to the West, and the Atlantic Ocean to the South.

The people of Ogun waterside are Yorubas from three major lineages, The Ijebus, The Ikales and the Ilajes, who largely observe similar customs and uphold the same traditions as other Yorubas, but shaped to a large extent by their amphibious environment among swamps, large water-bodies such as creeks, rivers and lagoons as well as forests. These among many others have made artisanal fishing activities as source of livelihood in the area.

Population of the Study

The target population of the study consists of women who are involved in artisanal fishing in Ogun Waterside Local Government Area of Ogun State.

Sampling Size and Technique

A two-stage sampling method was employed in the study. The first stage involved purposive selection of 30 percent of ten (10) major fishing villages in Ogun Waterside Local Government Area of Ogun State. This result to three (3) villages namely: Ode Omi, Makun Omi and Iwopin. The villages were selected because of their prominent fishing activities. In the second stage, thirty (30) percent of the four hundred and fourteen (414) women involved in artisanal fishing were selected producing a total of one hundred and twenty four (124) respondents which constituted sample size for the study.

Results and Discussion

Socio-economic Characteristics of Women Involved in Artisanal Fishing

Table 1 displays the socio-economic characteristics of the respondents. From the result, over half (61.3%) of the women who were actively involved in artisanal fishing fell within the age bracket of 20-49 years with an average of 44 years per respondents. This implies that majority of the respondents who were involved in artisanal fishing were mainly the middle aged, following the findings of Olapade and Sesay (2018), fisheries activities were certainly not for older folks due to the fact that it is energy sapping.

The result further shows majority (74.2%) of the women were married. The situation probably associated with age group who were involved in fishery activities. This result is similar to findings

of Anyim *et al.* (2021) which revealed that majority of the women who participated in fish processing and packaging were married. High percentage of married women could be attributed to the fact that their husbands were fishermen and because of their status or responsibilities, they had to render assistance to their husbands to enhance their livelihoods.

In terms of the education level, the study results showed that vast majority (93.5%) of the respondents in had some form of formal education. Ability of rural and coastal women to manage their business and home effectively has been premised on the attainment of certain level of education. The results of this study is however at variance with Olapade and Sesay (2019) who affirmed that women in fishing communities are usually not well read. Also, majority (63.7%) of the respondents practiced Islamic faith while 36.3% practiced Christianity.

Majority (64.5%) of the respondents had above 11 years of fishing experience with an average of 16 years per respondents. The result indicates that the respondents had ample years in the participation of fishing activities and were skillful with various techniques in fishing activities. This finding is supported by results of Oyekale *et al.* (2003), who noted that the more years acquired by experts in agricultural production over the years, the more optimum yield and increased level of income.

A larger proportion (66.9%) of the respondents had above 4 persons in their household with an average household size of 7 persons per household. This observation is in agreement with the report of Cliffe and Akinrotimi (2015), in some fishing communities, that most women fishers were matured, married and have a

high household number. Table 1 also reveals that monthly income distribution of the respondents. Majority (62.9%) of women was found earning below ₦25,000 with the average monthly earnings of ₦29,169.35. This implies that majority of the respondents' monthly income was low.

An evaluation of the primary occupation of the respondents revealed that over half (50.8%) of the respondents engaged in fishing as their main occupation. This result is in line with that of Cliffe *et al.* (2011) in some fishing communities in Nigeria. This may be due to an act of being proactive on the parts of the women in ensuring food security, generate income, and reduced feminine vulnerability within the family.

Secondary occupation means the second occupation in which the fisher-folks are engaged or seek in the off period of fishing (Shahadul *et al.*, 2017). The study showed that 16.1% of the respondents are involved in farming during off-fishing season. 16.1% of the respondents are involved in artisanship and 29.0% are involved in other occupations. In a similar study conducted by Bonjoru *et al.* (2019) in the upper Benue river basin, Nigeria reported that providing incentives, loans and training of the fishermen in other ventures helps reduce pressure on the water body.

Also, results indicate that 63.7% belongs to social organization such as cooperative and artisanal fish farmers association. Olapade and Sesay (2018) noted that co-operatives in the small-scale fisheries sector has helped in maximizing long term community benefits to deal with the threats of fisheries mismanagement, livelihood, insecurity and poverty.

Table 1: Distribution by socio-economic characteristics of the respondents

Variables	Frequency	Percentage	Mean
Age			
20-34yrs	36	29.0	43.67±13.90
35-49yrs	40	32.3	
50-64yrs	43	34.7	
Above 65yrs	5	4.0	
Marital status			
Single	4	3.2	
Married	92	74.2	
Widow	12	9.7	
Divorced	16	12.9	
Educational level			
Primary school	59	47.6	
Secondary school	57	46.0	
No formal education	8	6.5	
Religion			
Islam	79	63.7	
Christianity	45	36.3	
Artisanal fishing experience			
2-11 yrs	44	35.5	16.48±9.09
12-21 yrs	47	37.9	
22-31 yrs	21	16.9	
32-41 yrs	12	9.7	
Household Size			
4 or below	41	33.1	6.74±4.08
5-9	53	42.7	
10-14	25	20.2	
15 and below	5	4.0	
Artisanal fishing income per month			
₦25,000 and below	78	62.9	29169.35±24026.99
₦26,000-₦50,000	30	24.2	
₦51,000-₦75,000	8	6.5	
₦76,000-₦100,000	8	6.5	
Primary occupation			
Fishing	63	50.8	
Farming	12	9.7	
Artisans	44	35.5	
Others	5	4.0	
Secondary occupation			
None	39	31.5	
Fishing	9	7.3	
Farming	20	16.1	
Artisans	20	16.1	
Others	36	29.0	
Membership of social organization			
Yes	79	63.7	
No	45	36.3	

Women Involvement in Artisanal Fishing in the Study Area

Results in Table 2 revealed that respondents were involved majorly in fish processing (59.7%) and net fabrication

and mending (54.0%). This is in line with the study of Cliffe and Akinrotimi (2015) who indicated that women in coastal areas were involved in fish processing and selling fishery products.

Table 2: Distribution by Women involvement in artisanal fishing in the study area

Artisanal fishing activities	Involvement	
	Yes	No
Catching	21(16.9)	103(83.1)
Processing	74(59.7)	50(40.3)
Gear fabrication and mending	14(11.3)	110(88.7)
Net fabrication and mending	67(54.0)	57(46.0)
Selling of fishing equipment	48(38.7)	76 (61.3)
Boat construction	26 (21.0)	98(79.0)

Extent of Women Involvement in Artisanal Fishing in the Study Area

Table 3 shows that the women involved actively in (2) artisanal fishing activities which were fish processing (1.18) and net fabrication and mending (0.77). From the

results in Table 4, it was concluded that the level of involvement of women in artisanal fishing activities was low (62.9%). This implies that the respondents' involvement in artisanal fishing activities was low.

Table 3: Distribution by extent of women involvement in artisanal fishing

Artisanal fishing activities	Extent of involvement			Mean
	Always	Sometimes	Never	
Catching	12(9.7)	21(16.9)	9(73.4)	0.36
Processing	65(52.4)	16(12.9)	43(34.7)	1.18
Gear fabrication and mending	18(14.5)	17(13.7)	89(71.8)	0.43
Net fabrication and mending	29(23.4)	38(30.6)	57(46.0)	0.77
Selling of fishing equipment	25(20.2)	28(22.6)	71(57.2)	0.63
Boat construction	13(10.5)	13(10.5)	98(79.0)	0.31

Table 4: Distribution by level of extent of women involvement in artisanal fishing

Variables	Frequency	Percentage	Mean	Standard deviation
Low	78	62.9	8.19	3.21
High	46	37.1		
Total	124	100.0		

Sources of Artisanal Fishing Related Information Available to Women

Using the mean-values in Table 5, it was asserted that the respondents sourced information from friends and family (1.60), middlemen (1.58), television

(1.47), radio (1.25), newspaper (1.17) and artisanal fishing association (1.07). This finding is supported by Edeoghon *et al.* (2008) which suggested that the rise in farmers preferring friends, family and other farmers as a first-hand information

source may be due to the apparent ineffectiveness in the public extension in the public extension services in developing countries. In the findings of Girei *et al.*

(2019), the authors revealed that the major constraints faced in fisheries operation by women was inadequate extension service.

Table 5: Distribution by sources of artisanal fishing related information available to women

Sources of information on artisanal fishing	Yes	Not sure	Never	Mean
Artisanal fishing association	62(50.0)	9(7.3)	53(42.7)	1.07
Middlemen	81(65.3)	34(27.4)	9(7.3)	1.58
Radio	57(46.0)	41(33.1)	26(21.0)	1.25
Television	71(57.3)	40(32.2)	13(10.5)	1.47
Extension agent	38(30.6)	30(24.2)	56(45.2)	0.85
Friends and family	93(75.0)	13(10.5)	18(14.5)	1.60
Social media	34(27.4)	21(16.9)	69(55.7)	0.72
Newspaper	53(42.7)	39(31.5)	32(25.8)	1.17

Constraints Associated with Women Involvement in Artisanal Fishing

Results in Table 6 show constraints associated with women involvement in artisanal fishing includes highly laborious nature of artisanal fishing (2.77), low literacy (2.35), lack of access to resources (2.22), lack of women’s organization, women extension worker (2.13), limited access to modern technology (2.11), inadequate storage facilities (2.04) among

others. Spoilage of fish due to lack of proper storage facilities, may aggravate women poor condition of living. This is in consistence with the finding of Onemlease and Oriakhi (2011) who indicated that high cost of fishing inputs, insufficient capital, storage problems, spoilage of fish caught and declining quantity of fish catch were the major problem faced by the artisanal fishermen in Nigeria.

Table 6: Distribution by constraints associated with women involvement in artisanal fishing

Constraints	Very severe f (%)	Severe f (%)	Less severe f (%)	Not severe f (%)	Not a constraint f (%)	Mean
Highly laborious	21(16.9)	66(53.2)	25(20.2)	12(9.7)	-	2.77
Low literacy	17(13.7)	38(30.6)	40(32.3)	29(23.4)	-	2.35
Limited access to modern technology	22(17.7)	26(21.0)	28(22.6)	40(32.3)	8(6.5)	2.11
Lack of government strategies for addressing gender issues	16(12.9)	19(15.3)	48(38.7)	33(26.6)	8(6.5)	2.02
Lack of access to credit and finance	21(16.9)	16(12.9)	34(27.4)	45(36.3)	8(6.5)	1.98
Lack of women’s organization, women extension worker	25(20.2)	24(19.4)	38(30.6)	16(12.9)	21(16.9)	2.13
Male dominant society	14(11.3)	14(11.3)	24(19.4)	40(32.3)	32(25.8)	1.50
Lack of access to resources	16(12.9)	20(16.1)	63(50.8)	25(20.2)	-	2.22
Lack of access to market and rural infrastructure	8(6.5)	25(20.2)	56(45.2)	26(21.0)	9(7.3)	1.98
Inadequate storage facilities	17(13.7)	13(10.5)	65(52.4)	16(12.9)	13(10.5)	2.04
Exploitation by middlemen	13(10.5)	26(21.0)	24(19.4)	53(42.7)	8(6.5)	1.86

Relationship Between Women Involvement in Artisanal Fishing and Selected Socioeconomics Characteristics

Results in Table 7 shows significant relationship existed between women involvement in artisanal fishing and socio-economic characteristics such as age ($\chi^2=9.709$; $p<0.05$) and artisanal experiences ($\chi^2=12.643$; $p<0.05$). The effect of age comes from accumulated knowledge and experience. The result is in line with Anyim *et al.* (2021) who reported that elderly people are more likely to participate in newly introduced innovations (technologies) because they have more years of processing experience and may likely adopt any new technology that might enhance their performance and improve sales.

Formal education ($\chi^2=21.021$; $p<0.05$) was significantly related to women involvement in fishery activities. Individuals who spent more years in school acquiring formal education are more likely to participate in artisanal fishing activities than their less educated counterparts. Education widens the horizon of an individual and it also aids them in rational reasoning. This result is similar to the findings of Adeogun *et al.* (2008). Household size ($\chi^2=25.227$; $p<0.05$) was also significantly related to women participation in artisanal fishing activities. Women with large household size are more likely to engage in artisanal fishing activities than those from household size with fewer adults. The implication of the result is that more people in a household increases participation as they act as sources of labour in fishing activities. The result agrees with the works of Damisa and Yohanna (2007).

Income ($\chi^2=26.667$; $p<0.05$) was significantly related to participation of women in artisanal fishing activities, this is because respondents with a high income can afford the cost of innovation and bear the associated risks. According to Akinrotimi *et al.* (2011), households with a high socio-economic status and with more capital can accept the risk of adopting new technologies more easily and become innovators or early adopters.

Primary occupation ($\chi^2=17.763$; $p<0.05$) was significantly related to participation of women in artisanal fishing activities. Membership of social organization/association ($\chi^2=17.763$; $p<0.05$) was significant related to participation. The result shows that individuals who are members of social organization (such) have greater likelihood of participation than those who are not member of any social organization. Generally, fisheries are considered as a 'no go area' by most financial institutions in Nigeria as confirmed by the farmers (Olaoye *et al.*, 2012).

Table 8 shows that significant relationship existed between women involvement in artisanal fishing and sources of related information such as artisanal fishing association ($r= 0.418$; $p<0.05$), middlemen ($r= -0.442$; $p<0.05$), friends and family ($r= -0.215$; $p<0.05$). This is an indication that artisanal fishing association, middlemen and friends and family are the sources that had influenced involvement of women in artisanal fishing activities. The negative sign in the coefficient of middlemen and friends and family indicates that middlemen and friends and family are not good sources of information because it reduces their involvement.

Table 9 shows that significant relationship existed between women involvement in artisanal fishing and the constraints associated with women involvement. The constraints related are lack of access to credit and finance ($r=0.270$; $p<0.05$), male dominant society ($r=$

0.256 ; $p<0.05$) and lack of access to resources ($r= -0.202$; $p<0.05$). This is an indication that lack of access to credit and finance, male dominant society and lack of access to resources had influence on the involvement of women in artisanal fishing activities.

Table 7: Chi-square Analysis of relationship between women involvement in artisanal fishing and selected socioeconomics characteristics

Variables	Level of contribution		χ^2 Value	df	p value	Remark
	Low (%)	High (%)				
Age			9.709	3	0.021	Significant
20-34yrs	24 (30.8)	12 (26.1)				
35-49yrs	24 (30.8)	16 (34.8)				
50-64yrs	30 (38.5)	13 (28.3)				
Above 65yrs	0 (0.0)	5 (10.9)				
Marital status			4.133	3	0.247	Not Significant
Single	4 (5.1)	0 (0.0)				
Married	54 (69.2)	38 (82.6)				
Widowed	8 (10.3)	4 (8.7)				
Divorced	12 (15.4)	4 (8.7)				
Education			21.021	2	0.000	Significant
Primary education	46 (59.0)	13 (28.3)				
Secondary education	24 (30.8)	33 (71.7)				
No formal education	8 (10.3)	0 (0.0)				
Religion			0.014	1	0.906	Not Significant
Islam	50(64.1)	29 (63.0)				
Christianity	28 (35.9)	17 (37.0)				
Artisanal experiences			12.643	3	0.005	Significant
2-11yrs	28 (35.9)	16 (34.8)				
12-21yrs	30 (38.5)	17 (37.0)				
22-31yrs	8 (10.3)	13 (28.3)				
32-41yrs	12 (15.4)	0 (0.0)				
Household size			25.227	3	0.000	Significant
4 or below	33 (42.3)	8 (17.4)				
5-9	37 (47.4)	16 (34.8)				
10-14	8 (10.3)	17 (37.0)				
15 and above	0 (0.0)	5 (10.9)				
Income			26.667	3	0.000	Significant
25000 and below	57 (73.1)	21 (45.7)				
26000-50000	13 (16.7)	17 (37.0)				
51000-75000	8 (10.3)	0 (0.0)				
76000-100000	0 (0.0)	8 (17.4)				
Primary occupation			17.763	3	0.001	Significant
Fishing	42 (53.8)	21 (45.7)				
Farming	4 (5.1)	8 (17.4)				
Artisans	32 (41.0)	12 (26.1)				
Others	0 (0.0)	5 (10.9)				
Secondary occupation			7.042	4	0.134	

None	21 (26.9)	18 (39.1)				Not Significant
Fishing	9 (11.5)	0 (0.0)				
Farming	12 (15.4)	8 (17.4)				
Artisans	12 (15.4)	8 (17.4)				
Others	24 (30.8)	12 (26.1)				
Social organization			24.085	1	0.000	Significant
Yes	37 (47.4)	42 (91.3)				
No	41 (52.6)	4 (8.7)				

Table 8: Correlation analysis of relationship between women involvement in artisanal fishing and its sources of related information

Variables	R	p value	Remark
Artisanal fishing association	0.418**	0.000	Significant
Middlemen	-0.442**	0.000	Significant
Radio	-0.032	0.727	Not Significant
Television	0.017	0.854	Not Significant
Extension agent	0.147	0.103	Not Significant
Friends and family	-0.215*	0.016	Significant
Social media	0.149	0.100	Not Significant
Newspaper	-0.060	0.509	Not Significant

Table 9: Correlation analysis of relationship between women involvement in artisanal fishing and its constraints

Variables	r	p value	Remark
Highly labourious	0.022	0.813	Not Significant
Low literacy	-0.016	0.858	Not Significant
Limited access to modern technology	0.129	0.155	Not Significant
Lack of government strategies for addressing gender issues	-0.036	0.692	Not Significant
Lack of access to credit and finance	0.270**	0.002	Significant
Lack of women's organization, women extension worker	0.004	0.969	Not Significant
Male dominant society	0.256**	0.004	Significant
Lack of access to resources	-0.202*	0.024	Significant
Lack of access to market and rural infrastructure	0.125	0.165	Not Significant
Inadequate storage facilities	0.087	0.339	Not Significant
Exploitation by middlemen	-0.064	0.478	Not Significant

Conclusion

The study concludes that majority of the sampled respondents were middle aged, married and educated. Over half (62.9) of the respondents had low involvement in artisanal fishing activities. Women involvement in artisanal fishing depend on age, artisanal fishing

experiences, formal education, household size, monthly income, primary occupation, membership of social organization/ association and sources of information such as middlemen, friends and family and constraints such as lack of access to credit and finance, male

dominant society and lack of access to resources.

Recommendations

Based on the findings of this study, the following recommendations were made:

1. Women should be supported to form groups and build their capacity especially on fishery management for improved participation in fishing activities. Organization of training workshops will enhance access and sharing of fishery related information.
2. Women fisher folks should be encouraged to mobilize or pool their financial resources together in order to ameliorate the constraints imposed by lack of finance and recourses.
3. Effective and efficient extension services must be prioritized to provide the required information that will addresses the need of women involved in fishing activities.
4. There is need to create awareness on the role of women in fisheries activities and this should be seen as a tool for women empowerment and rural transformation. This will encourage women in fisheries business as this can alleviate poverty and improve women involvement in fishing activities.

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