



# EFFECT OF WOMEN PARTICIPATION IN ARTISANAL FISHING ON THEIR SOCIO-ECONOMIC WELL-BEING IN COASTAL COMMUNITIES IN CROSS RIVER STATE, NIGERIA

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(Received 3 July 2023; Revision Accepted 8 August 2023)

## ABSTRACT

This study examined the effect of women participation in artisanal fishing on their Socio- economic well-being in coastal communities in Cross River State, Nigeria. The study focused specifically on the socio-economic characteristics of women artisanal fish farmers, areas of women participation in artisanal fishing, and effect of women participation in artisanal fishing on their socio-economic well-being. The population of the study comprised all rural women in the coastal communities, who are involved in artisanal fishing activities. The sample was drawn from the population of the study using simple random sampling techniques. A total of 200 respondents were used for the study. Data were collected using a semi-structured interview schedule, and analyzed using the mean, ranking, percentages and ordered probit regression model. Results of analysis indicated that 66% of the women were between the ages of 20-40 years, 39.5% of them attended secondary school, 60% of the women had 3-6 children and about 58% of them were married. Women were also involved in a wide range of areas of artisanal fishing, including fish catch, unloading of fish from canoes, fish processing and carrying and repair of fish gear etc. The study found that women participation in artisanal fishing enabled them to have more money (ranked = 1<sup>st</sup>), do not lack money again (ranked=2<sup>nd</sup>), allowed them to build their own houses (ranked = 3<sup>rd</sup>) and enhanced their capacities to contribute donations to charities (ranked = 4<sup>th</sup>) among others. The result of probit analysis revealed that women participation in artisanal fishing was determined by their level of education, credit facilities, age, cultural/religious variables, and family factors etc. The study recommended that government should provide credit facilities in form of grants to rural women involved in artisanal fishing and provide basic training in terms of safety protocol, preservation and processing of fish.

**KEYWORDS:** Artisanal Fishing, Women, Socio-economic, Participation, coastal communities

## INTRODUCTION

Artisanal fishing is a term often used as a convenient portmanteau, encompassing all kinds of small-scale, low-technology, commercial or subsistence fishing practices, particularly those associated with coastal, island or river bank settlements and utilizing largely traditional techniques in the capture, processing and marketing of fish and fish products. There is no technical consensus on the definition of artisanal fishing, but the term is almost always used in connection with fishing activities characterized by small scale and often decentralized operations,

predominance of small vessel, predominance of traditional fishing gears – though sometimes modern gears are involved, short and inshore fishing trips, subsistence to commercial fisheries, and having family welfare as its ultimate goal. Artisanal fishing (or traditional/ subsistence fishing) consists of various small-scale, low-technology, low-capital, fishing practices undertaken by individual fishing households, as opposed to commercial fishing companies (Garcia, 2009). Many of these households are of coastal or island ethnic groups. These households make short (rarely overnight) fishing trips close to the shore. Their produce is

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usually not processed and is mainly for local consumption. Artisanal fishing uses traditional fishing techniques such as rod and tackle, fishing arrows and harpoons, cast nets, and small (if any) traditional fishing boats (Eremi and Aya, 2014).

Artisanal fishing may be undertaken for both commercial and subsistence reasons. It contrasts with large-scale modern commercial fishing practices in that it is often less wasteful and less stressful on fish populations than modern industrial fishing. Artisanal fishing is different from large scale industrial commercial fishing activities because it is usually, but not always, less intensive and does not put pressure on fish population. It is not captured in the concept of fishing for sport, and frequently depend on less sophisticated gears such as throw and drag nets, arrows, rod and tackle, harpoons, hook and line, or even trawlers etc. Bene, Macfadyen and Allison,(2007) maintained that the most important goal of artisan fishing is domestic consumption, as it is often an important source of inexpensive and accessible protein in poor coastal areas. Unlike industrial and ornamental fishing practices, Timothy and Dalzell (1994) observes that artisanal fishing is fishing primarily to put food directly on the community table.

Sustainable Development Goal 14 (Goal 14 or SDC, 14) is about "Life below water" and is one of the 17 SDGs established by the United Nations in 2015. The official wording is to "conserve and sustainably use the oceans, seas, and marine resources for sustainable development." The goal has 10 targets to be achieved by 2030. Progress towards each target is being measured with one indicator each. The first seven targets are "outcome targets." Reduce marine pollution; protect and restore ecosystems; reduce ocean acidification; sustainable fishing; conserve coastal and marine areas; and subsidies contributing to overfishing and increase the economic benefits from sustainable use of marine resources. Artisanal fishing activities promote sustainable use of water resources and not usually associated with water pollution unlike large-scale industrial fishing. Artisanal fishing therefore is the most sustainable way of using water and fish because it is less harmful to environment.

Gender-based poverty is a global problem, and addressing the deep-rooted income disparities between men and women requires a multifront approach. Women around the world, in developed, developing and underdeveloped countries, live in poverty and are the greatest victims of poverty. In the United States, for example, more women live in poverty than men. According to U. S. Census Bureau data, of the 38.1 million people living in poverty in 2018, 56 percent (representing 21.4 million) were women. In Sub-Saharan Africa and Latin America, over 80 percent of women live in poverty and approximately 70 percent of them are found in rural areas.

Women are the majority of the poor because of cultural norms, values, gender division of labour and assets, and power dynamics between men and

women (Kabeer, 2015). In the Western countries, women poverty status is reinforced by not only cultural and patriarchal sentiments, but very profoundly by racial stereotypes and educational attainment. Women of colour and of Hispanic origins constitute a greater percentage of the poor women. In Africa, however, women are the majority of the poor due mainly to cultural and religious elements, and importantly, the societal perception of women as inferior gender (Eremi and Aya, 2014). Women and girls bear an unequal burden of unpaid domestic responsibilities and are overrepresented in informal and precarious labour sectors. Women generally have natural agency and knowledge that is frequently neglected by policy-makers as they design and implement poverty reduction initiatives. Development interventions continue to be based on the belief that men are bread winners and women are dependents. The African women have traditionally applied themselves as "beast of burden", performing all the household chores, perform farm work, engage in business activities and some of them are involved in civil service work. They have combined all these responsibilities successfully over the years, yet their contributions are still highly underappreciated and constrained by the obstacles placed on their paths by the community. Women have evolved in many different ways, and despite improvements made in the areas of gender equality, women empowerment and human right, women have continued to suffer from gender-related discrimination.

Women's fishing activities are indisputably vital to community wellbeing, even as women are said to be the instrument for reducing hunger, poverty and promoting family welfare, and because they produce between fifty percent to eighty percent of the world's food, especially in developing regions (Mahmood, 2011). Women constitute a substantial proportion of any country's population, but they contribute much less than men towards the value of recorded production both quantitatively in labour force participation and qualitatively in educational achievement and skilled manpower (Lawanson, 2008). Women contributions are often under-valued, underpaid and overlooked in national statistics. The participation of women in artisanal fishing sector is widely constrained by both economic and non-economic factors. Because women were hitherto regarded as homemakers, who are responsible for all domestic or home activities, modern fisheries development interventions, projects and programmes are often biased or skewed in favour of men and the participation of women in the fishing industry is strongly truncated by patriarchal labour ideologies and societal perception of women's role in productive ventures, both of which combined to perpetuate the traditional gender stereotypes which places less value on women and their contributions towards the sustenance of the society.

According to Isatou (2003), the educational status of women in the fisheries sector compared to men is inferior and women do not have special programmes for their training in technology improvements. They

do not have access to credit facilities and enjoy very limited attention in terms of expansion of their fishing activities and government – sponsored interventions to improve micro-fishing venture. Women's active participation in fish production is affected by a broad range of circumstances and factors including societal perceptions, domestic pressures and sexual harassment from male colleagues etc. The fishing needs of women are generally not captured by national budgets. Again, our national development programmes are directed towards the national interests and often the needs of a national government may not necessarily be the same as those of the rural dwellers. Most of the revenue generated from the rural fishing communities through taxes, for example, goes to cater for the growing needs of urban based communities, thus widening the rural-urban economic gap and undermining the challenges faced by the people (Liloqula, 1989).

Active participation in the fishery sector, according to Eremi, Aya, Ogar and Iyama, (2021), requires the empowerment of fisherfolk, it demands motivation, active involvement and organization of all fishing population (irrespective of their gender). Active participation demands that fisherfolk who are the ultimate beneficiaries of programmes participate in determining their needs and priorities and contribute to sustainability of actions and initiatives. This requires that beneficiaries are organized and form an integral part of the information gathering system. However, women are not fully involved in decision making processes and their level of organization and response to their needs are limited (Isatou, 2003). There is equally an obvious lack of societal acknowledgement of the value of subsistence fish production performed primarily by women. The position of women in the fisheries industry in Nigeria has remained one of the most neglected aspects of national development discourse, even though the artisanal fishing sector has seen the dominance of women, providing link between capture and consumption. Women take part in activities such as unloading of fish from fishing canoes, marketing of the catch, fish processing (e.g. smoking and drying), direct capturing of fish from the river or sea as well as fish and fish products distribution. Artisanal fishing is a core component of coastal living, and its importance in terms of provision of food, jobs, income, nutrition, sustainable livelihood, poverty alleviation and engagement of young people can no longer be taken for granted. Government – sponsored rural development and poverty reduction interventions have traditionally been gender-driven, with the men, who frequently present themselves as family heads being the ultimate beneficiaries. The wife is seen as a subordinate to the husband,

implying that any intervention designed to address household's needs should be directed towards the husbands (Idiku, Eremi, Ntui, Nwogu and Besong, 2022). This mentality, unfortunately, favoured by actors in formal institutions has found strong reinforcements in religious, social and cultural environments in the society. Some women, in a quest for self-help, have engaged in various activities in artisanal fishing, ranging from direct catch to drying, processing, and marketing.

However, the participation of women in the artisanal fishing sector in coastal communities in Cross River State and its effect on their socio-economic well-being has not been given a robust attention in the research community. This is exactly why this study was carried out to examine the implications of women participation in artisanal fishing in coastal communities in Cross River State on their poverty status.

### **Objectives of the study**

The broad objective of this study was to examine the effect of women's participation in artisanal fishing in coastal communities on their socio-economic well-being in Cross River State. The specific objectives of the study were to;

- i. examine the socio-economic characteristics of women involved in artisanal fishing in the state;
- ii. ascertain the areas of women participation in artisanal fishing in the study area.
- iii. determine the effect of women participation in artisanal fishing on their socio-economic well-being in the area.

### **Research Methodology**

The study was conducted in southern and central Cross River State, Nigeria. The area comprised thirteen (13) local government areas, namely Abi, Boki, Etung, Ikom, Obubra, and Yakurr, Biase, Akamkpa, Odukpani, Akpabuyo, Bakassi, Calabar south and Calabar municipality. The area is bounded by Obanliku and Obudu Local Government Areas to the north, Ebonyi and Abia states to the West, Akwa Ibom State and Atlantic Ocean to the south and the Republic of Cameroon to the East. The area lies approximately 25m above sea level, with an average temperature range of 27°C – 33°C. It experiences an average monthly rainfall of 25mm between May and September and 3.5mm between November and January. The area is crisscrossed by a number of rivers, which makes farming and fishing the main occupations in the area. Farming and fishing accounts for about 80% of the occupation and sources of livelihoods of the entire population of the area.



**Figure 1: Map of the study area (Cross River State)**

Source: [29]

(Adopted from Eta, Eremi, Idiku, and Eta, 2023.)

### Sample and Sampling Techniques

The southern and central Cross River State was purposively chosen for the study because it is largely a riverine locality where fishing is a strong economic mainstay. Eight (8) coastal Local Government Areas namely Abi, Ikom, Obubra, Biase, Odukpani, Akpabuyo, Bakassi and Calabar South were purposively selected for the study. A total of 200 respondents (women) were randomly selected for the study. Thus, a sample size of 200 women artisanal fish farmers was used.

### Research Instrument

The instrument used for data collection was a validated semi-structured interview schedule.

### Data Analysis

Data were analyzed with the use of descriptive statistics such as mean, ranking, and percentages. The ordered probit regression model was used to analyze the relationship between socio-economic variables and women participation in artisanal fishing. The model was specified as follows:

$$Y = (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}U_i)$$

Where Y = is dichotomous dependent variable which can be explained as:

Y = 1, if women participate, Y = 0, if women did not participate

X<sub>1</sub> = Age of a women (years)

X<sub>2</sub> = Marital status (Dummy; Married = 1, otherwise = 0)

X<sub>3</sub> = Educational level of a women (years of schooling)

X<sub>4</sub> = Income (Naira)

X<sub>5</sub> = Experience in fishing (years)

X<sub>6</sub> = Access to credit facilities (Dummy; Yes = 1, No = 0)

X<sub>7</sub> = Family factors (Dummy; favourable to participation = 1, Not favourable = 0)

X<sub>8</sub> = Cultural and religious factors (Dummy; positive = 1, negative = 0)

X<sub>9</sub> = Taboo (Dummy; Yes = 1, No = 0)

X<sub>10</sub> = Ability to swim (Dummy; Yes = 1, No = 0)

U<sub>i</sub> = Error term.

## Results and Discussion

Table 1: Socio-economic characteristics of the respondents

Variable	Frequency	Percentage
<b>Age (Years)</b>		
<20	30	15
20 – 40	120	60
41 – 60	35	17.5
>60	15	7.5
<b>Total</b>	<b>200</b>	<b>100</b>
<b>Level of Education</b>		
No formal education at all	7	3.5
Primary school	28	14
Secondary school	79	39.5
OND/NCE	50	25
HND/Degree	35	17.5
Others	1	0.5
<b>Total</b>	<b>200</b>	<b>100</b>
<b>No of Children</b>		
<3	60	30
3 – 6	120	60
>6	20	10
<b>Total</b>	<b>200</b>	<b>100</b>
<b>Marital Status</b>		
Married	116	58
Single	54	27
Divorced	6	3
Widow	24	12
<b>Total</b>	<b>200</b>	<b>100</b>
<b>Monthly Income</b>		
<5000	4	2
5000 – 30,000	32	16
30,000 and above	164	82
<b>Total</b>	<b>200</b>	<b>100</b>

Source: Field Survey, 2022

Results in Table 1 revealed that 60 percent of the women were within the age bracket of 20 – 40years, 3.5 percent had no formal education, while a good proportion of them attended one form of formal education or the other. The results equally indicates that 58 percent of the respondents were married women, while 82 percent of them earned over thirty thousand (30,000) naira monthly from artisanal fishing activities. These findings means that artisanal

fishing practices are predominantly carried out by relatively young women and those women who are married. It was also observed that the women involved in artisanal fishing activities in the area have attended various levels of formal education, from primary, secondary to tertiary levels of learning. This is opposed to the general assumption that rural people, particularly rural women are illiterate.

Table 2: Areas of women participation in artisanal fishing

S/N	Variables	Frequency	Percentage
	<b>Areas of Participation</b>		
1.	Unloading of fish from canoes	167	84
2.	Catching of fish from the river	98	49
3.	Marketing of the catch	191	96
4.	Fish processing (e.g. smoking and drying)	118	59
5.	Fish products distribution	80	40
6.	Decision making on the control of fishing	29	15
7.	Helping to carry fish gear (e.g. nets)	179	90
8.	Washing of catch and fishing gears	178	89

Source: Field Survey, 2022

Table 2 indicates that women were involved in a wide range of artisanal fishing activities. In particular, a substantial number of them participated in the marketing of the catch (96%), helping in carrying fishing gears (90%), and unloading of fish from canoes (84%). However, the result revealed that the number of women who took part in decision making regarding the control of fishing (15%) in their communities was small. This result implies that women are participating in different areas of artisanal fishing in coastal communities. Rural women are active participants in various income generating activities; they take part in fishing expeditions to catch for both domestic consumption and for sales to generate money to support their families; they are

involved in the processing (sun drying, smoking, salting and packaging of fish), they participate in the maintenance of fishing gears, as well as help in the marketing of harvested fish. There is hardly any area of artisanal fishing where the rural women are not actively involved. These activities were traditionally perceived to be men's but in recent times women have penetrated every area of fishing enterprise because of increased demand for women to support their families economically. This corroborates the submissions of Isatou (2003) that women are involved in catching of fish, marketing, unloading of canoes and fish processing and products distribution, etc. The result also supports that of Liloqual (1989).

### Effect of women participation in artisanal fishing on their socio-economic well-being

**Table 3: Distribution of respondents according to effect of artisanal fishing on their socio-economic well-being (N=200)**

S/N	Effects of artisanal fishing	$\sum fx$	Mean	Ranking	Remark
1.	I make more money from taking part in fishing activities	840	4.2	2 <sup>nd</sup>	Accepted
2.	I now have more savings due to my involvement in fishing	721	3.61	7 <sup>th</sup>	Accepted
3.	I have rented a better house for myself and my family due to fishing activities	670	3.35	11 <sup>th</sup>	Accepted
4.	I have built my own house with savings from fishing	811	4.06	3 <sup>rd</sup>	Accepted
5.	Fishing activities have improved the quality of the food we eat	718	3.59	8 <sup>th</sup>	Accepted
6.	I do not cook without fish	574	2.87	15 <sup>th</sup>	Accepted
7.	I have gone to school to complete my education using my savings from fishing	690	3.45	9 <sup>th</sup>	Accepted
8.	I sale processed fish to train my children	744	3.72	6 <sup>th</sup>	Accepted
9.	I now support my husband financially due to the money I get from fishing	591	2.96	14 <sup>th</sup>	Accepted
10.	I have been wearing new cloth because of money from fishing activities	499	2.50	17 <sup>th</sup>	Accepted
11.	I pay my medical bills easily now because I get money from fishing activities	637	3.19	12 <sup>th</sup>	Accepted
12.	I am now a member of many cooperative societies	555	2.78	16 <sup>th</sup>	Accepted
13.	I contribute to community development projects from my fishing savings	768	3.84	5 <sup>th</sup>	Accepted
14.	I now cook good meals for my family because I make more money from fishing activities	676	3.38	10 <sup>th</sup>	Accepted
15.	I have introduced my children into fish processing and marketing and we do not lack money again	824	4.12	1 <sup>st</sup>	Accepted
16.	I am no longer called "poor woman" by my friends in our village	780	3.9	13 <sup>th</sup>	Accepted
17.	Through fishing activities I have been contributions to charity programmes (e.g. food, cloth, water etc.)	800	4.00	4 <sup>th</sup>	Accepted

Source: Field Survey, 2022

Results in Table 3 show the socio-economic benefits women derived from participation in artisanal fishing in Cross River State. The results revealed that all the items identified recorded mean scores above the decision rule of 2.50 which means they were accepted. Specifically, it was observed that women participation in artisanal fishing made them and their households not to lack money (ranked = 1<sup>st</sup>), allowed them to have more money ( $\bar{x}$  = 4.2; ranked = 2<sup>nd</sup>), enabled them to build their own houses ( $\bar{x}$  = 4.06; ranked = 3<sup>rd</sup>) and enabled them to contribute to

charities ( $\bar{x}$  = 4.00; ranked = 4<sup>th</sup>) among a wide range of other benefits that have positive impact on their well-being. The implication of the findings is that artisanal fishing activities have substantial contributions to mitigating gender-related poverty particularly among rural women. By participating in fishing activities, women can address their educational, nutritional, medical and infrastructural needs without depending on the men or government. The results revealed that artisanal fishing has positive effects on women well-being by improving

their standard of living and that of their households. The results supports Timothy and Dalzell (1999), Eremi and Aya (2014) and Idiku *et al.* (2022) who affirmed that artisanal fishing is a very important economic activity that empowers women to contribute meaningful to the society and live meaningful lives. It reduces gendered poverty and bridge income inequalities and gaps in the society,

thereby reducing the vulnerabilities women suffer in the society.

#### Hypothesis Test

Hoi: There is no significant relationship between selected socio-economic characteristics of the respondents and their participation in artisanal fishing.

**Table 4: Ordered probit regression analysis of determinants of women participation in artisanal fishing in the area (dependent variable; participation in artisanal fishing)**

		Estimate	Std. error	Wald	Significance
Threshold	PERFI = 1	19.558	3.683	28.198	0.000
	PERFI = 2	24.424	3.766	42.060	0.000
Location	X <sub>1</sub>	-1.769	0.888	3.966	0.046
	X <sub>2</sub>	2.162	2.761	0.613	0.434
	X <sub>3</sub>	19.492	0.863	509.984	0.000
	X <sub>4</sub>	1.982	2.387	0.690	0.406
	X <sub>5</sub>	0.080	2.387	0.690	0.406
	X <sub>6</sub>	-0.346	1.275	0.074	0.786
	X <sub>7</sub>	5.269	2.803	3.533	0.060
	X <sub>8</sub>	4.062	2.383	2.906	0.088
	X <sub>9</sub>	0.963	1.890	1.171	0.279
	X <sub>10</sub>	-6.062	2.329	6.773	0.009

Pseudo R<sup>2</sup> (Cox and Snell) = 0.645

Chi square = 442.807

Significant at 5%

The improvement in fit made by the explanatory variables included in the model, measured by the model chi-square of 442.807, which is significant at the 1% level of probability indicates that the independent variables included in the model jointly significantly predicted the dependent variable in the ordered probit regression. The strength of association between the dependent and the independent variables, captured by the Cox and Snell Pseudo R<sup>2</sup> and which estimated value is 0.645, indicates that the strength of association between the dependent and the independent variables is about 65%

#### Parameters Estimate

The estimate indicates that the coefficient of seven of the ten predictor variables included in the regression are significant, variously, at the 5% and 1% levels of significance in determining the level of women participation in artisanal fishing in the area. The coefficient of the other three variables-marital status, income and experience in fishing were not significant but rightly signed. This result means that women participation in artisanal fishing activities in the area is determined by their age, level of education, access to credit facilities, cultural/religious variables, taboos, family variable and ability to swim.

This study reveals that rural women's participation in artisanal fishing activities in Cross River State's coastal communities, like their participation in other economic ventures, is determined predominantly by their socioeconomic status. Women's access to credit facilities, like their age, can greatly influence their involvement in fishing activities. Typically, older women are less likely to be actively involved in

artisanal fishing because of the stress, hazards and labour requirements associated with artisanal fishing. However, young women, particularly those who have access to credit facilities enjoy the luxury of physical strength to endure long sea/river fishing expeditions, long distance paddling of fishing canoes, carrying of fishing gears, and processing of fish.

Rural women's economic activities are equally a function of cultural and religious stereotypes prevalent in their families/communities. Frequently, a woman's engagement in any business enterprise is only to the extent permitted by the gender-based prejudices in the area, and where Patriarchal Sentiments masked enlightened orientations, it is always difficult for women to express themselves economically (Eta, Eremi, Idiku and Eta, 2023). This is greatly manifested in the area of artisanal fishing in Cross River State's riverine communities where cultural/religious variables defines women's participation in fishing activities. These findings agrees with Davis (2007), Charlton (2010) and Cohen and House (2003).

#### CONCLUSION

Artisanal fishing is an important source of livelihood for rural dwellers, and in particular rural women. Women have been and would probably continue to be key players in the development of rural fisheries sector. Because women's earnings are largely spent on basic household requirements such as food, child healthcare and education, improving their participation in artisanal fishing would enable women to accumulate the income to support their families. Since the study revealed that credit facilities and



education, among other variables are major determinants of women participation, it is important therefore, for the government to address the credit constraint and educational shortcomings of rural women to increase their competitiveness and participation in artisanal fishing and other economic activities.

### RECOMMENDATIONS

The following recommendations are based on the findings of the study;

- i. Government should provide credit facilities for rural women and improve their skills through vocational training on all forms of fishing activities.
- ii. Government should provide storage facilities, markets and technical training to rural women to support their fishing activities and reduce the losses associated with lack of good preservation facilities.
- iii. Men should equally be enlightened on the need to support their wives in the various areas of artisanal fishing.
- iv. Government should provide women with modern fishing equipment to enhance their operations and improve the revenue they derive from artisanal fishing.

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