



Volume 1 issue 2 2025

SOCIO-ECONOMIC STATUS AND FISHING METHODS USED BY ARTISANAL FISHERFOLKS IN KATSINA STATE, NORTH-WEST, NIGERIA

¹Dauda, A.B., ²Adeola, S.S., ¹Sadauki, M.A., & ¹Salele, H.A.¹Department of Fisheries and Aquaculture, Federal University Dutsin-Ma, Katsina State, Nigeria²Department of Agricultural Economics, Federal University Dutsin-Ma, Katsina State, Nigeria¹*Corresponding author: tdabak@gmail.com; +2348062085120**Keywords:**Artisanal,
Fishing
Methods,
Socio-
Economic,
Reservoir,
Katsina State**ABSTRACT**

Socio-economic status has a huge impact on fishing methods as it influences participation, fishing practices, gears and methods used. It is necessary to understand the socio-economic status and fishing methods used by the artisanal fisherfolks in order to have an insight and information on the sustainability of the water bodies. This study was therefore carried out to assess the socio-economic status and fishing methods used by artisanal fisherfolks on water bodies in Katsina State. The study used a two-stage sampling procedure to select three water bodies, one each from each of the three agro-ecological zones in the state, and then select 145 fisherfolks from the three water bodies based on the proportion of fisherfolks in the three water bodies. A well-structured questionnaire was administered and descriptive statistics was used to analyse the data. The socio-economic data revealed that 63% of the respondents are below the age of 40 years, primary school education with a percentage of 44% as the dominant educational status. The majority of the respondents has a maximum household size of seven, while 47% have between one and ten years of fishing experience. Fishing is the main occupation of 65.5% of the respondents, with 57.9% of them earning less than a maximum of 100,000 naira annually. Passive fishing method only represents the dominant method with 55.2%, while the factors considered in selecting fishing gears by the fisherfolks are led by the size of the water body, followed by fish size and shape. The study revealed that the socio-economic status of the fisherfolks is low, and this is corroborated by the passive fishing method dominating among them. The study recommends that the fishing communities should further utilize their associations to secure interventions and trainings that could help increase their practices and subsequently their socio-economic status.

Citation: Dauda, A.B., Adeola, S.S., Sadauki, M.A., & Salele, H.A. (2025). SOCIO-ECONOMIC STATUS AND FISHING METHODS USED BY ARTISANAL FISHERFOLKS IN KATSINA STATE, NORTH-WEST, NIGERIA. FUDMA Journal of Animal Production & Environmental Science, 1(2), 37-42. <https://doi.org/10.33003/japes.2025.v1i2.37-42>

INTRODUCTION

Fish is a cheap source of animal protein, and it has a substantial contribution to global protein consumption, especially in the coastal and riverine areas (Dauda *et al.*, 2021). About 50% of animal protein consumed in Nigeria is from fish and fish products (FDF, 2009). Fish production is from two major sources which are capture and aquaculture, with capture further classified into artisanal and industrial (commercial trawlers) fisheries (Bonjoru *et al.*, 2019). According to FAO (2025), fish production in Nigeria stood at 1.1 million tonnes in 2022, 36% from marine catch, 36% from inland waters catch and 28% from aquaculture. Artisanal fisheries have consistently remain the most important fisheries sector in Nigeria with previously over 80% of the domestic production until recently when there was a serious boost in aquaculture, especially in the last two decades. As noted by Dauda *et al.* (2018), production from aquaculture grew from less than 40,000 metric tonnes in the early 2000s to over 300, 000 metric tonnes in 2015. Sadly, most of the recent attention to boost fish production in Nigeria has been focused on aquaculture, with little attention to the

most important sector, which is artisanal fisheries. Artisanal fisheries are small scale fishing practices that involve the use of traditional and inadequate equipment to harvest fish from natural water bodies such as rivers, streams, lakes, lagoons, estuarines and ponds (Olaoye and Ojebiyi, 2018). It is being practiced in most states of the country either in natural water bodies or man-made lakes and it has been credited as an important source of employment and means of livelihood to the artisanal fisherfolks (Dauda *et al.*, 2021). According to Lawal *et al.* (2016) over one million Nigerians are directly earning their livelihood from artisanal fisheries while another 5.8 million are indirectly involved. Therefore, developing the sector will not only mean an increase in fish for consumption but also increased livelihoods for a substantial number of citizens of the country. Katsina State is reported to have over 40 man-made lakes/reservoirs (Dauda *et al.*, 2015). It is one of the states with the largest number of man-made lakes in the country. Fishing activities are going on in most of these reservoirs mainly at the artisanal level with primitive fishing techniques viz-a-viz fishing gears, crafts and methods (Dauda *et al.*,

2021). The artisanal fishers use two methods of fishing which are passive and active fishing methods which is dictated by the available fishing gears and crafts. The passive method involves the use of nets such as gillnet and traps which can be easily operated with more primitive crafts such as gourd, and it is mostly used since it requires lower cost of operation and within the reach of most fisherfolks which are generally regarded as low-income earners (Dauda et al., 2021; Oladoja and Adeokun, 2009), while the active method involve the use of gears like cast net, trawl net, long lines and bigger fishing crafts like canoes with or without outboard engines, therefore usually used by fisherfolks with relatively better income levels. Socio-economic status has a huge impact on fishing methods as it influences participation, fishing practices, and the overall sustainability of fisheries (Shaheen and Yousuf, 2024). It is necessary to understand the socio-economic status and fishing methods used by the artisanal fisherfolks in Katsina State to have an insight and information on the sustainability of each studied water body. This study aimed to assess the socio-economic characteristics and fishing methods used by artisanal fisherfolks in Katsina State, Northwest, Nigeria.

RESEARCH METHODOLOGY

Study Area

A field survey design was used in the present study. This study was conducted in Katsina State, Northwest Nigeria. Katsina State covers an area of 23,938 sq km, located between latitudes 11° to 13°N and longitudes 7° to 8° 30' E. The State is found in the Sudano-Sahelian Agro-Ecological region and is divided into thirty-four (34) Local Government Area and three (3) agricultural zones, namely: Zone 1, Ajiwa, Zone 2, Funtua and Zone 3, Dutsin-Ma (Dauda *et al.*, 2015).

Sampling and Sample Size

The target population of the study are artisanal fisherfolks in the state. Prior to questionnaire administration, a reconnaissance survey was conducted to identify water bodies and a discussion session with heads of fishermen (*Sarkin ruwa*) from each of the selected water bodies in the state. The study adopted a two-stage sampling procedure in selecting fishermen from the study area to elicit information on their fishing activities. In the first stage, one (1) fishing water bodies (reservoirs) were purposively selected from each of the agricultural zones making a total of three (3) water bodies in the State due to the intensity of fishing activities from the selected water bodies. Mairua Reservoir was selected from Funtua zone, Zobe Reservoir from Dutsin-ma zone and Daberam

Reservoir from Ajiwa Zone. While in the second stage, 145 fisherfolks were randomly selected from the three water bodies.

Data Collection

The data for this study was collected through the use of a well-structured questionnaire from the 145 artisanal fisherfolks who were drawn from the three selected water bodies based on the proportion of total number of fishermen from each of the water body. The interviews were made to elicit information from the heads of each fishing landing site selected (*Sarkin Ruwa*). The questionnaire was structured into two parts namely Part A and B. In part A, socio-demographic information of the artisanal fisherfolks were collected. Part B was on the various fishing gears, crafts and methods used in their fishing activities. Direct observation of artisanal fishermen at the landing sites were made to corroborate some of their responses.

Data Analysis

A descriptive statistical method using frequencies, percentages was used to analyze the socio demographic of the respondents, fishing methods and factors considered in selecting fishing gears. The analysis was carried out using Microsoft Excel 2018.

RESULTS

Socio-Economic Characteristics of the Artisanal Fisher-Folks in the Study Area.

The socio-economic characteristics of the respondents is shown in the Table 1. The respondents were all between the ages of 21 and 70 years. Majority (24%) were between age 21 and 30, followed by those within the age range of 31 to 40 years which constitute about 23%, while the least age group among the respondents were 51 to 60 and 61 to 70 years constitution 6% each of the artisanal fisherfolks in the study area. Majority (72%) of the respondents are married. The dominant education status was primary school with 44% of the respondents, while the least was tertiary education with 11%. Majority (43%) have household size ranging between 1 and 7 persons. This was followed by those with 8 to 14 and 15-21 persons, constituting 33% and 17% of the respondents, respectively. The least in this category were those with household size ranging from 36-42 persons per household which constituted 0.7% of the respondents. The result equally shows the level of fishing experience among the fisher folks in Katsina State. Majority (47%) of the respondents have 1 to 10 years of fishing experience, representing the highest group, closely following that is the group of artisanal fisherfolks with years of fishing experience ranging from 11-20 years constituting 26% of the entire respondents while

those with the years of fishing experience ranging from 21-30 years constituting about 17%. The result also revealed that the artisanal fisherfolks in the study area are poor in formal training. Only 16% of the respondents had formal fishing related trainings, with 39% of those with fishing related training having Diploma certificate while 13% of them only attended seminar on fishing. Majority of the respondents (65.5%) have fishing as their major occupation. The number of years spent in the locality ranged between 1 to 70 years, with 21 to

30 years having the highest percentage (23%), followed by 11 to 20 and 31 to 40 with 21% each. The least group is 61 to 70 years with only 5%. The average annual income of the respondents is dominated by 100,000 naira and below with about 9.7% earning greater than 500,000 naira annually. Those who belong to association were slightly higher (51%) than those who were not, with majority of them (80%) having less than 10 years of experience of membership of an association.

Table 1: Socio Economic Profile of the Respondents

Parameter	Frequency	Percentage
Age Group		
10 – 20	30	20
21-30	35	24
31-40	34	23
41-50	30	21
51-60	8	6
61-70	8	6
Marital Status		
Married	105	72
Single	40	28
Educational Status		
Primary School	63	44
Secondary School	47	32
Tertiary Education	16	11
Quranic Education	19	12
Household Size		
1-7	63	43
8-14	48	33
15-21	24	17
22-28	7	5
29-35	2	1.3
36-42	1	0.7
Years of Fishing Experience		
1-10	68	47
11-20	38	26
21-30	25	17
31-40	11	08
41-50	03	02
Fishing Related Training		
Yes	23	16
No	122	84
Types of Training		
Certificate	7	30
Diploma	4	17
Workshop	9	39
Seminar	3	13
	23	100
Fishing as Main Occupation		
Yes	95	65.5
No	50	14.5
Years Spent in the Locality		

1 – 10	14	20
10 – 20	31	21
21 – 30	33	23
31 – 40	31	21
41 – 50	24	17
51 – 60	4	3
61 – 70	8	5
Average Annual Income (Naira)		
1 – 100,000	84	57.9
101,000 – 200,000	17	11.7
201,000- 300,000	14	9.7
301,000 – 400,000	7	4.8
401,000 – 500,000	9	6.2
>500,000	14	9.7
Membership of Association		
Yes	85	59
No	60	41
Years of Membership of Association		
0 – 10	116	80
11 – 20	22	15.2
21 – 30	5	3.4
>30	2	1.4
	145	100

Fishing Methods used by Artisanal Fisherfolks in Katsina State

As shown in Table 2, the fishing methods used by the fisherfolks are generally classified into three. Majority of the fisherfolks (55%) used only passive

fishing method. While 37% of the fisherfolks are using only active fishing methods, the remaining 8% are using combination of both active and passive gears.

Table 2: Fishing Methods used by the Artisanal Fisherfolks in the Study Area

Fishing Methods	Frequencies	Percentages
Active method only	54	37.2
Passive method only	80	55.2
Combination of active and passive methods	11	7.6
Total	145	100

Factors Considered in the Selection of Fishing Gears by the Artisanal Fisher-Folks in Katsina State

The artisanal fisherfolks gave insight to what factors they consider in selecting the fishing gears they use for their fishing activities in the study area (Table 3). Ranking first among the factors is the size of water bodies as revealed by 94% of the respondents. Second on the list of the factors is the

size and shape of the targeted fish species, as indicated by 79% of the respondents. Time of fishing and the current water visibility were respectively indicated as factor considered in selecting their fishing gears by 63% of the respondents. Ranking last on the list of factors indicated are target fish species and the fish-eating habits as indicated by 61% of the respondents.

Table 3: Factors Considered in the Selection of Fishing Gears by the Artisanal Fisher-Folks in the Study Area

Factors	*Percentages	Rank
Size of water bodies	94	1
Fish size and shape	79	2
Time of fishing	63	3
Current water visibility	63	3
Target species	61	5

DISCUSSION

Fishing has been an important source of food and employment to large number of people globally, with Nigeria not an exception. In this study, the fisherfolks are dominated by youth with a whooping 67% below the age of 40 years. It shows a promising future as it is still enticing to the younger generation within the active productive age of the country's work force (FAO, 2016). Age is an important socio-economic characteristic because it affects productivity, output and efficiency. This indicates that larger number of people involved in fish catching are still active and physically fit to paddle the canoes (Alhassan *et al.*, 2023). The observation is also within the range observed by Dauda *et al.*, (2021) in Dutsin-Dam, Katsina State. The majority of the respondents are married with fairly high number of households, which is similar to previous research on fishing communities (Dasuki *et al.*, 2014; George *et al.*, 2021). It is an indication that large number of the state's populace directly and indirectly dependent on income from fishing. Oladapo and Ajani (2024) also reported fairly large household size among fishers in Oyo state and noted that large household size could be of advantage to labour intensive fishing activities. The dominating educational status is primary school which though might be considered low, it is, however, followed closely by secondary school, which put some hope and reflects that the fisherfolks can be easily trained and technology can be easily transferred (Kasali *et al.*, 2018; Egesi, 2016) to ease the development of fishing and ensure sustainable fishing practices in the state. The result did not deviate from the general position of Adams *et al.*, (2021) who documented that there is limited educational attainment in fishing communities across sub-Saharan Africa. A very low percentage of 16% had formal training related to fishing, out of which few days' workshop is dominant training type. This indicates that fishing in Katsina State, is more like family business which is transferred across generation and not a product of education or formal training. This could be responsible for continuous exploring of traditional tools and methods. The above position is further corroborated with number of years of fishing experience, with about 53% having more than 10 years, despite the fact that 63% are less than 40 years. It means many of them were exposed to fishing from childhood and the fishing skills were transferred across generations. This is in line with the observation of Oladapo and Ajani (2024) and Dauda *et al.* (2021). The study

also revealed that over 65% of the fishers in Katsina state has fishing as the main occupation, it further confirms fishing as a major source of livelihood (Lawal *et al.*, 2016). While those who belong to one fishing association or another outnumbered those who are not. This is expected to facilitate improve practices and access to intervention programme. The annual income from fishing is dominated by less than 100,000 naira. This can be regarded to be very low, and it is lower than what was previously reported by Dauda *et al.*, (2021) in Dutsin-ma dam, a small water body within the state. Although, it is not out of expectation as artisanal fishers are constantly associated with poverty (Oladoja and Adeokun, 2009; Akanni, 2008).

As precisely put by Oladapo and Ajani (2024) that potential of artisanal fisheries in freshwater reservoirs, dams, and lakes is unrealised because of factors including low capacity, lack of finance, poor equipment, poverty, and lack of support from the government. So, it is expected that the fishing gears and methods have some relationship with the socio-economic status of the fisherfolks. In this study, majority of the fishers are using passive fishing method which further inform why they might have low catch and hence, the observed low income. The passive fishing method involves the use of passive gears such as traps and gillnet that are usually used by resource limited fishers who could not travel far in the water body and limit their activities to shallow and coastal part of water bodies (Alhassan *et al.*, 2023; Dauda *et al.*, 2021). This limitation could also influence the targeted fish species and size.

According to the results in the study, the factors considered in selecting fishing methods in water bodies in Katsina State are led by size of the water bodies, fish size and shape, time of fishing. This observation is in line with the report of Tagago *et al.*, (2011) who noted that different gears are used for targeting fish because of habitat changes.

CONCLUSION AND RECOMMENDATIONS

The research provided information on the socio-economic status and fishing methods used by the fisherfolks across water bodies in Katsina State, Nigeria. It provides salient information including the dominant of youth in the industry, low income from fishing and limited formal training about the job. It further revealed that passive fishing method is the most commonly used method and documented that size of water bodies, and fish size and shape as the leading factors influencing the

choice of fishing gears, hence, fishing methods. It is recommended that the fishing communities should further utilize their association to secure interventions and trainings that could help increase their practices and subsequently their socio-economic status

ACKNOWLEDGMENTS

The Tertiary Education Trustfund and Management of Federal University Dutsin-ma, Katsina State are appreciated for providing and approving fund for this study through the TETFund Institutional-Based research grant scheme.

REFERENCES

- Adams, S.J., Boateng, P., & Agyemang, S. (2021). Income diversification in fishing communities: Evidence from rural households. *Journal of Fisheries Economics and Management*, 32 (1), 45-63.
- Akanni, K.A. (2008). Catch Levels and Capital Investment of Artisanal Fishermen in Lagos State, Nigeria. *Turkish Journal of Fisheries and Aquatic Sciences*, 8, 361-368
- Alhassan, Y.J., Umar, S., Gona, A., & Jega, I.S. (2023). Analysis of the Constraints Influencing Artisanal Fisheries along Shiroro and Kainji Dams, Nigeria. *Sch J Agric Vet Sci*, 10(9), 121-129.
- Bonjoru, R., Ndeham, V.R., & Amadu, S.O. (2019). Artisanal fishing gears used in two riverine wetlands of the upper Benue River basin, Nigeria. *International Journal of Advanced Science and Research*, 4 (3), 51-54.
- Dasuki, A., Dauda, A.B., Oshoke, J.O., Tiri, G.D., & Bichi, A.H. (2014). A Survey of Artisanal Fisheries of Makera Zone of Zobe Reservoir, Katsina State. In: *Proceedings, 29th Annual Conference of Fisheries Society of Nigeria (FISON)*, held between 24th – 29th November 2014 at Royal Choice Inn Ltd, Gondo Aluor Road, Old GRA, Lobi Quarters, Makurdi, Benue State Nigeria. pp 2-5
- Dauda, A.B., Dasuki, A., & Bichi, A.H. (2015). Analysis of constraint to Aquaculture development in Sudano-Sahelian region of Nigeria. *Tropical and Subtropical Agroecosystem*, 18, 189-193
- Dauda, A.B., Dogo, M.T., & Abdulkareem H.O. (2021). Socio-economic status of fisherfolks and fishing activities in Dutsin-Ma reservoir, Katsina State, Nigeria. In *Book of Abstract 36th Annual conference of the Fisheries Society of Nigeria*, Garden City 2021, held between 24th and 29th October 2021 at Ebitimi Banigo Auditorium, University of Port Harcourt, Choba Rivers State. FISONR2021/FSE/016.
- Dauda, A.B., Natrah, I., Karim, M., Kamarudin, M.S., & Bichi, A.H. (2018). African Catfish Aquaculture in Malaysia and Nigeria: Status, Trends and Prospects. *Fisheries and Aquaculture Journal*, 9(1).
- Egesi, O. C. (2016). Artisanal Fishers and the Adoption of Fishing Technologies in Bayelsa State, Nigeria. *International Journal of Geography and Environmental Management*, 2(1), 7-11
- FAO (2016). *Increasing the Contribution of Small-Scale Fisheries to Poverty Alleviation & Food Security. 1st Edn*, Food & Agriculture Organization, Rome, Food and Agriculture Organization.
- FAO. (2025). Fishery and Aquaculture Country Profiles. Nigeria, 2024. Country Profile Fact Sheets. In: *Fisheries and Aquaculture*. Updated Aug 5, 2024 [Cited Sunday, July 6th 2025]. <https://www.fao.org/fishery/en/facp/nga>
- FDF (2009). Nigeria National Aquaculture Strategy Assisted by FAO. Federal Department of Fisheries, Abuja Nigeria 19pp.
- George, A.D.I., Akinrotimi, O.A., & Nwokoma, U.K. (2021). Socio-Economic Analysis of Artisanal Fisheries in Three Local Government Areas of River State, Nigeria. *Quest Journal of Research in Agriculture and Animal Science*, 8(2), 16-23 www.questjournals.org.
- Kassali, R., Baruwa, O.I., & Mariama, B.M. (2018). Economics of fish production and marketing in urban areas of Tillabery and Niamey in Niger Republic. *International Journal of Agricultural & Rural Development*, 4(2), 65-71.
- Lawal, J., Obatola, P.O., Giwa, E.J., & Alhaji, T.A. (2016). Socio-Economic Analysis of Artisanal Fishing Operation in West and East Axes of Lagos State, Nigeria. *World Journal of Agricultural Research*, 4(1), 31-35.
- Okeowo, T.A., Bolarinwa, J.B., & Ibrahim, D. (2015). Socio Economic Analysis of Artisanal Fishing and Dominant Fish Species in Lagoon Waters of Epe and Badagry Areas of Lagos State. *International Journal of Research in Agriculture and Forestry*, 2, 38 –35.
- Oladapo, O.O., & Ajani, E.K. (2024). Demographic Distribution and Constraints to Fish Catch and Livelihood of Fishers in Selected Man-Made Lakes in Oyo State, Nigeria. *Nigerian Journal of Fisheries*, 21(2), 2965-2970.
- Oladoja, M.A., & Adeokun, O.A. (2009). Analysis of socio-economic constraints of fisherfolks on poverty alleviation in Lagos State. *Agricultural Journals*, 4(3), 130-134.
- Olaoye, O.J., & Ojebiyi, W.G. (2018). Marine Fisheries in Nigeria: A Review. In: *Marine Ecology—Biotic and Abiotic Interactions*; Türkoğlu, M., Önal, U., Ismen, A., Eds.; Intech Open: London, UK. Available online: <https://www.intechopen.com/chapters/59865>
- Shaheen, M.A., & Yousuf, A. (2024). Fishermen's community livelihood and socio-economic constraints in coastal areas: An exploratory analysis. *Environmental Challenges*, 14. <https://doi.org/10.1016/j.envc.2023.100810>.
- Tagago, T.A., & Ahmed, Y.B. (2011). Fishing gear survey of Tatabu floodplain, In: R.J. Koko and A.M. Orire (Eds), *Proceedings of the 26th Annual Conference of the Fisheries Society of Nigeria (FISON)*. 28th Nov. - 2nd Dec., Minna, Niger State, Nigeria. pp 109-116.