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Socioeconomic characteristics, information requirements and accessibility among artisanal fishers in Idah Local Government Area, Kogi State, Nigeria

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Abstract

Information needs represent gaps in the current knowledge of the user. Artisanal fishers like any other producer needs information to improve on production. The sustainability of artisanal fish production requires that information should not only be available but accessible. Hence, the level of information requirement and accessibility is dependent on the socio-economic characteristics of the artisanal fishers. The study analyzed the socio-economic characteristics, information requirements and accessibility among artisanal fishers in Idah Local Government, Kogi State, Nigeria. Multistage random sampling technique was adopted in selecting 85% of the respondents to make a total sample size of (128) for the study. A structured questionnaire and scheduled interview were used to collect data which were analyzed with descriptive and inferential statistics. Descriptive statistics used were frequency distribution and percentages while Logit model was used to test significant relationship among the variables. Results showed that fisher folks were mostly married 69%, male 58.6% with high level of formal education (66%), important area of information requirements of the artisanal fishers werefisheries regulation 34.4% and construction of different hanging ratio 24.2%. About 26% had access to information on fish marketing and18.8% on construction of different hanging ratio; problem of fund 68.0%, inadequate awareness on information 64.8% and political affiliation 32.8% were constraints to information accessibility among the respondents. Significant relationships exist between age (P< 0.00), gender (P< 0.01), educational level (P< 0.00); household size (P< 0.005) and the respondents' information requirements and accessibility to needed fisheries information.It is recommended that extension packages that revolve around the information requirements of the artisanal fishers should be provided in fishing communities and extension agents through personal contacts, radio broad cast and socio media platforms should be intensified to increase level of information accessibility among the artisanal fishers.

Keywords: Accessibility, artisanal, constraint, information, requirement

Caractéristiques socio-économiques, exigences d'information et accessibilité entre les pêcheurs artisanaux dans la zone des gouvernements locaux d'Idah, l'État de Kogi, le Nigéria

Résumé

Les besoins en informations représentent des lacunes dans les connaissances actuelles de l'utilisateur. Les pêcheurs artisanaux comme tout autre producteur ont besoin d'informations pour améliorer la production. La durabilité de la production de poissons artisanaux nécessite que des informations ne soient pas seulement disponibles mais accessibles. Par conséquent, le niveau d'information et l'accessibilité de l'information

dépend des caractéristiques socio-économiques des pêcheurs artisanaux. L'étude a analysé les caractéristiques socio-économiques, les exigences d'information et l'accessibilité entre les pêcheurs artisanaux du gouvernement local de l'Idah, l'État de Kogi, le Nigéria. La technique d'échantillonnage aléatoire à plusieurs étages a été adoptée dans la sélection (85%) des répondants pour former une taille d'échantillon totale de (128) pour l'étude. Un questionnaire structuré et une entrevue programmée ont été utilisés pour collecter des données analysées avec des statistiques descriptives et inférentielles. Les statistiques descriptives utilisées étaient une distribution et des pourcentages de fréquence pendant que le modèle logit a été utilisé pour tester une relation significative entre les variables. Les résultats ont montré que les pêcheurs étaient généralement mariés (69%), hommes (58,6%) avec un niveau élevé d'éducation formelle (66%), un domaine important des besoins en information des pêcheurs artisanaux (34,4%) et la construction de différentes pendages ratio (24,2%). Environ 26% avaient accès à des informations sur le marketing poisson et18,8% sur la construction de différents ratios de suspension; Problème du Fonds 68,0%, une prise de conscience inadéquate sur les informations 64,8% et l'affiliation politique de 32,8% étaient des contraintes à l'accessibilité de l'information entre les répondants. Des relations importantes existent entre l'âge (p <0,00), le sexe (p <0,01), le niveau d'éducation (p <0,00); Taille du ménage (P <0,005) et les exigences de l'information des répondants et l'accessibilité aux informations sur la pêche nécessaires. Il est recommandé de prévoir que les forfaits d'extension autour des exigences de l'information des pêcheurs artisanaux devraient être fournis dans les communautés de pêcheurs et les agents de vulgarisation par des contacts personnels, des plates-formes de distribution radio et de la Socio Media Socio, devraient être intensifiées pour accroître l'accessibilité de l'information entre les pêcheurs artisanaux.

Mots clés: accessibilité, artisanal, contrainte, information, exigence

Introduction

Fish makes vital contribution to the food and nutritional security of 200 million Africans and provides income for over 10 million people mostly small-scale fisher folk and entrepreneurs engaged in fish production (World Fish Centre, 2015). Fishery activities are executed through two main methods in Nigeria namely artisanal or capture fishery and fish farming. Artisanal fishery is the harvesting of fish from rivers, streams, lakes and ponds by small scale fishermen using both traditional and modern fishing gears. It is the most important of fishery production in Nigeria and accounts for over 90% of her fishery production (Ogunbadejo*et al*., 2017). The artisanal fishery provides income and employment for the fisher folks and supplies cheap protein for the populace. Sustainable artisanal fishery practices are idea and hygienic fish capturing, handling, processing, preservation and marketing. Knowledge and adherence to sustainable fishing practices would make fish to be available continually in the water bodies, ensure the production of good quality fish products and would maximize the profit of the fisher folks (Adisa*et al*, 2021).Dambatta and Sogbesan (2015) stated that enormous potentials offisheries to help feed and improve the nutritional status of Nigerians are greatly under-realizedand precious aquatic resources are being degraded. Motul'skij (2011)described information as the feeling of lacking something and wishing to fill the gap. All activities of living organisms and especially human activities always generate need for information about the changing environment and conditions of the tasks performed. The character of the human activity defines the character of information

needed. For any activity to be executed, adequate information is required. Artisanal fisher folk also require basic information on their fish capture activities. Information on weather, fish species, breeding seasons, marketing, sources of credit, modern fish capture methods, fish processing and storage are all required by fishermen in order to have satisfactory fish production. Pertiwi *et al*. (2012).In this increasingly information dependent age, the lack of information could certainly have serious, or even, perilous consequences. Information is needed in all stages of human development. For information to be of optimum use, it must be relevant, accurate, timely, recent, clear and effective (Ogunremi, 2017). Access to information is the right of humans and the use is dependent on the capacity to access and use Olojede*et al.* (2017). Artisanal fishers require a variety of information in order to meet the modern-day challenges of fish production, processing, marketing and distribution. These areas of fisheries information needs are diverse and vary from one area to the other depending on the prevailing fishermen's practices and water bodies. Studies on artisanal fishers in Kogi State have also been undertaken but none of them is known to be in the area of information requirement and accessibility among artisanal fishers. The study aimed at identifyingthe socio-economic characteristics, information requirements and accessibility of the artisanal fishers among fishers in Idah Local Government, Kogi State, Nigeria.

Materials and methods

Idah Local Government Area of Kogi State is located in the East Central region of Nigeria. **Idah** is a town in Kogi State, Nigeria on the eastern bank of River Nigeria; it is the headquarters of the Igala Kingdom with an area of 36 km^2 and a population of 79,815. Artisanal fishing is practiced in three major communities of Idah Local Government, namely: Ofuruber, Egah and Opu-Attah whichare in Reverie areas. The prominent River in Idah is River Niger however, there are other smaller rivers, streams and Lakes scattered all over the communities that serve as sites for intensive artisanal fishing. According to Agriculture Department Idah Local Government Area, Fisheries unit recorded 150 artisanal fishers in the three communities selected as study area. Random sampling technique was adopted in selecting (85%) of the respondents from the communities constituted the total sample size of (128) respondents for the study. Descriptive statistics (frequency and percentages) was used to analyze the data.

Sampling procedure

Multistage sampling technique was adopted in selecting respondents for the study. First, three fishing Communities were purposively selected from Idah Local Government because of the high number of artisanal fishers s in the area. Secondly, (85%) artisanal fishers were randomly selected from the total population size of 150 as obtainedfrom Fisheries Unit,Agriculture Department Idah Local Government Area to make a population size of one hundred and twenty eight (128) respondents. The respondents' distribution from each community is36, 65 and 27 respectively for Oforuber, Egah and Opu-attah. ***Method of data collection and analysis***

Data for the study was obtained from the respondents using a well-structured questionnaire and scheduled interview(Ogunremi*et al.,* 2017). Data obtained from the study were analyzed with descriptive and inferential statistics. Descriptive statistics used were frequency distribution and percentages while Logit model was used to test significant relationship among the variables ($p < 0.05$).

Results and discussion

Demographic characteristics of the respondents

The demographic characteristics of the respondents are contained in Table 1. About 59% of the artisanal fishers were males while about 41.4% were females. The age distribution showed that those within the age range of 26-35 years were 43.8%, while those within the range of above 45 years were 3.9%. The marital status showed that majority of the respondents (55.9%) where married, while only 8.6% where divorced. The artisanal fishers with tertiary education as the highest educational qualification were 51.6% while those with primary education were only 10.2%. In terms of household size, most of the respondents (68.8%) had 3-4 persons per household, 16.4% had 5-6 persons per household, 11.7% had 1-2 persons per household while those with 6 and above persons per household were 3.1%. High percentage house hold size of 3-4 could be attributed to higher level of education among the respondents unlike the usual large family size that is common in rural areas.In a similar study among fisher folks in Benue State(Ogunremi*et al.,* 2017) reported that majority of artisanal fishers were male, married but many were betweenthe age of 30 – 39 years and illiterate.Jim-Saiki *et al.*(2016) and Garabe*et al.*(2019) revealed that artisanal fishery is a male dominated occupation with many married between 20 – 40 years old.The implication of people of 20 – 40 years' age bracket engaged in fishing means that fishers were young and energetic people (Ngodigha*et al.,* 2018).

Table 1: Demographic characteristic of the respondents

Variables	Frequency	Percentage (%)
Sex		
Male	75	58.6
Female	53	41.4
Total	**128**	**100.0**
Age		
below 25 years	52	40.6
26-35 years	56	43.8
36-45 years	15	11.7
above 45	5	3.9
Total	**128**	**100.0**
Marital Status		
Single	48	37.5
Married	69	53.9
Divorced	11	8.6
Total	**128**	**100.0**
Educational Level		
primary School	13	10.2
Secondary School	49	38.3
tertiary level	66	51.6
Total	**128**	**100.0**
Household Size		
1-2	15	11.7
3-4	88	68.8
5-6	21	16.4
6 and above	4	3.1
Total	**128**	**100.0**

Source: Field survey, 2021.

Fishing characteristics of the respondents

Table 2 shows the artisanal fishers used cast net (60.2%) as their fishing gear while only 3.9% use traps. The craft used distribution shows that 40.6% of the fishers used plank canoe for fishing; few 2.3% usedfibre canoe, 76.6% used paddle as means of propelling the water for movement while 23.4% used outboard engine. The use of fishing gear type is a function of the fishers' choice, financial buoyancy, and species of fish to catch, the season of the year, water depth and size of the river. Dugout canoe is oldest traditional craft used by fishers but gradually been replaced with wooden canoe but the modern one is fibre canoe. Fibre canoe though expensive has an advantage of durability because it cannot rotten with time unlike the dugout and plank type. Low usage of outboard engine n the study area could be attributed to its high cost which many fishers could not afford.In a related study at Upper Benue River Basin, Bonjoru (*et al.,* 2019) reported gill net and Malian traps used. However, variation in usage of different gear is an indication of the choice and the prevailing condition. The efficiency of gear types is influencedby mesh size, exposed net area, flotation, mesh shape andhanging ratio, visibility and type of netting material in relationwith stiffness and breaking strength (Amadu, 2020).Fishers may decide to change the gear type used for fishing as opined by Bonjoru*et al.* (2019), a fisherman could hold different types of gear and any of them can be used as the case may be. Craft can be operated by paddle or controlledwith outboard engine. The attachment ofoutboard engine to craft has been reported ininland water bodies of Nigeria (Ibrahim and Ogueji, 2017).Traditional fishing arts have been developed over the years to adapt to local water body conditions; the species of fish desired and targeted size. The most successful fishing methods of an area or a region are those that have stood the test of time (Kingdom and Kwen, 2009).

Table 2:Fishing characteristics of the respondents

Variables	Frequency	Percentage (%)
Gear Used		
Gill net	15	11.7
cast net	77	60.2
trawl net	14	10.9
hook and line	17	13.3
Traps	5	3.9
Total	128	100.0
Craft Used		
dugout canoe	49	38.3
plank canoe	52	40.6
fiber canoe	3	2.3
Total	128	100.0
Which of these do you use?		
Outboard engine	30	23.4
Paddle	98	76.6
Total	128	100.0

Source: Field survey, 2021

Species of fish caught and sold by the respondents

The species of fish caught and sold by the respondents are shown in Table 3. *Oreochromis niloticus* (38.3%) and *Heteroloranchusbidorsalis*(25.0%) were the prominent fish speciescaught by the respondents. About 63.0% sold fish in Kg, 27.3%, used baskets while 6.3% used basin. The quantity of sale distribution shows that 78.1% sold**N**1,000-29,000 weekly, 21.1% sold **N**30,000-59,000 weekly; 56.3% had abundant catches during the dry season, 43.7% had abundant catches in raining season. Species of fish caught could be as a result of its abundance in water body apart from the gear type.*Orechromisniloticus*which belongs to family Cichlidaecommonly called Tilapias' dominance could be attributed to their adaptation tolentic aquatic environmental qualities, productivity of the waterand changes in the hydrological regime of the water, theirhigh prolific breeding nature (Dan-Kishiya, 2012) coupled with their goodparental care which gives a considerable advantage in thecolonization of their habitat. The dominance of the Cichlidae familyin the present study agrees favorably with what was reportedby (Alagoa*et al;* 2018) on Tilapia abundance in most water bodies which was attributed to variation in number offish species and families that the artisanal fisher's catch inthe water body was attributed to fishing methods andgears selectivity, which could also be a result of fish size andtarget species. Most artisanal fishers sold fish in Kilograms in the study area was an improvement compared to the traditional methods of using basket or basin to quantify sales. The advantage it that there is uniformity in sale compared to variation in sizes of baskets and basins. Reasons for abundance of fish caught in dry season were because of low water level.

Table 3:Species of fish caught, sold and fishing by the respondents

Variables	Botanical Names	Frequency	Percentage (%)
Species of Fish			
Barbell	*Barbusoccedentals*	28	21.9
Cat fish	*Heteroloranchusbidorsalis*	32	25.0
Tilapia	*Oreochromis niloticus*	49	38.3
Trunk fish	*Gymmachusnicticus*	13	10.2
Silver Sida	*Chrysicthysnigrodigitatus*	2	1.6
Mould Fish	*Clariasanguilaris*	4	3.1
Total		128	100.0
How do you quantify and sell your fish			
Kg		80	62.5
Baskets		35	27.3
Basins		8	6.3
No standard		5	3.9
Total		128	100.0
Quantity sold Weekly (₦)			
1,000-29,000		100	78.1
30,000-59,000		27	21.1
60,000-99,000		1	0.8
Total		128	100.0
Season of abundant catches			
Raining season		56	43.7
Dry season		72	56.3
Total		128	100.0

Source: Field survey, 2021.

Table 4 indicates the areas of information requirements of the artisanal fishers. Only 34.4% indicated fisheries regulation as their major area of information requirement, construction of different hanging ratio (24.2%), sources of finance (13.3%), prevention of post-harvest loses (10.9%) while electro fishing (0.8%) and fish marketing (0.8) were the least required. High level of information requirement of the fishers on fisheries regulation is a good development because its understanding will assist the fishers to abide by the ethics of fishing, on a long run improve on catches meaning there will be Maximum Sustainable Yield (MSY). Information need portrays a desire by the artisanal fishers to have improvement in their fishing. This coupled with the fact that artisanal fishers are poor, may have informed the high level of information need in the area of source of finance. In a similar study, Adisa*et al.*(2021) reported that artisanal fisheries could contribute to national economic growth if they received opportunities to become more productive as the population increases.Oose (2015) reported outboard engine maintenance and outboard engine safety as mostly needed information among artisanal fishers in Coastal areas of Southwest.

Table 4: Information requirements of the fisher folks

Information	Frequency	Percentage (%)
Use of outboard engine	8	6.3
Construction of different hanging ratio	31	24.2
Fisheries regulation	44	34.4
Subsidies on fishing input	4	3.1
Prevention of post-harvest losses	14	10.9
Source of finance	17	13.3
Modern fish processing	2	1.6
Electro fishing	1	0.8
Weather	6	4.7
Fish marketing	1	0.8
Total	**128**	**100**

Source: Field survey, 2021.

In Table 5, only 25.8% of the artisanal fishers in the study area had access to information on fish marketing, 18.8% on construction of different hanging ratio, 14.8% on source of micro finance and prevention of post- harvest losses was 12.5% while subsidies on fishing input was the least with 1.6%. Artisanal fisher's accessibility to information was generally very low in the study area. This can be attributed to the fact that most artisanal fishers live in areas with bad terrain and poor access to extension services and other sources of information. Factors such as illiteracy and poverty hinder fisher folks' unfettered access to various information sources (Khanum ,2013; Das *et al* .2015).

Table 5: Information accessibility among the artisanal fishers

Information	Frequency	Percent (%)
Use of outboard engine	6	4.7
Construction of different hanging ratio	24	18.8
Fisheries regulation	15	11.7
Subsidies on fishing input	2	1.6
Prevention of post-harvest losses	16	12.5
Source of micro finance	19	14.8
Modern fish processing	4	3.1
Weather	9	7.0
Fish marketing	33	25.8
Total	**128**	**100.0**

Source: Field survey, 2021.

Constraints to information requirements and accessibility by the respondents are shown in Table 6 only 34.4% of the respondents strongly agreed that non-consistent Government policy is a constraint to information requirement while 18.0% strongly disagreed. On the problem of fund, 68.0% strongly agreed while only 0.8% disagreed. Also, on inadequate awareness on information, majority (64.8%) of the respondents agreed to it with only 2.3% who strongly disagreed. Political affiliation is a constraint to information requirement (32.8%), while 18.0% strongly disagreed, and on inadequate extension agent contact, 54.7% of the artisanal fishers strongly agreed while only 2.3% strongly disagreed. It is therefore clear that each of the factors listed above are constraints to information requirements and accessibility and therefore have effect on the performance and output of the artisanal fishers in the study area.

Table 6: Constraints to information requirement and accessibility by the respondents

Variables	Strongly Agreed	Agreed	Strongly Disagreed	Disagreed	Undecided	Total
Inconsistent Government policy						
Frequency	44	17	23	19	25	128
Percentage (%)	34.4	13.3	18.0	14.8	19.5	100
Problem of fund						
Frequency	87	40	-	1	-	-
Percentage (%)	68.0	31.3	-	0.8	-	-
Inadequate awareness on information						
Frequency	35	83	3	3	4	128
Percentage (%)	27.3	64.8	2.3	2.3	3.1	100
Political affiliation						
Frequency	11	42	23	29	23	128
Percentage (%)	8.6	32.8	18.0	22.7	18.0	100
Inadequate extension agent contact						
Frequency	70	43	3	5	7	128
Percentage (%)	54.7	33.6	2.3	3.9	5.5	100

Source: Field survey, 2021.

The result of logit regression analysis is contained in Table 7. The result indicated that age (0.00), gender (0.01), education level (0.00) and household size (0.005) have significant effect on the respondents' accessibility to needed fisheries information at 5% level of significance. The R^2-value of 0.347 indicated that the factors in the model account for about 44.4% of the variation. It therefore implies that age, gender, educational level and household size determined information required and accessibility among the artisanal fishers. Older fishers because of their experience over time are able to determine information required and ways of accessing such information. There is certain information among fisher folks that is gender specific for instance fish processing. Education illuminates and exposes artisanal fishers to seeking various ways of fishing technologies which necessitate information requirement; through education as well such information can be assessed.Mtega (2012) indicated that respondents' occupation, age, and level of education influence the need for some types of information.

Table 7: Logit model on information requirements and accessibility among artisanal fishers

Variables	Coefficient.	Standard Errors	Wald	Sig
Age	-5.119	1.551	22.281	0.000*
Gender	-0.3720	0.022	1.003	0.018*
Educational level	0.577	0.662	0.188	0.001*
Household size	0.581	0.198	0.564	0.005*
Craft used	0.365	0.024	0.012	0.223
Gear used	0.122	0.989	0.651	0.122
Fishing location	0.322	0.170	0.401	0.063
Season of abundant catches	0.019	0.066	1.891	0.311

Log Likelihood ratio = 120.116; Nagelkerke R^2 = 0.347; Chi-square statistic = 42.887; Sig. = 0.000; *: Significant at $p < 0.05$ level

Conclusion

The study showed that major areas of information requirement include fisheries regulation, construction of different hanging ratio, and source of micro finance and prevention of post-harvest losses. The need to increase fish capture, acquire modern fishing tools and increase income level of fisher folk might have informed this high need for information in the study area. Accessibility to needed information was very low among the fishers. Poverty and lack of fisheries extension in fishing communities could have been responsible for the low access to needed information requirements among the respondents. Non consistent Government policy, inadequate awareness on information and inadequate extension agent contact were constraints to the respondents on information requirements.

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