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A survey on socioeconomic status, profitability of *Clarias gariepinus* sales and constraints of fish sellers along river Taraba, Taraba state, Nigeria

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Abstract
A survey on socio-economic status, profitability of smoked *Clarias gariepinus* sales and constraints encountered by fish sellers along River Taraba, Taraba State, Nigeria was conducted from November 2017-April 2019. Unemployment, poverty and the hustle for survival have necessitated the business of buying and selling of *Clarias gariepinus* for profit-making. The study uncovered the socioeconomic attributes of *Clarias gariepinus* sellers, find out buying and selling prices, described the selling margin, selling efficiency and constraints encountered by *Clarias gariepinus* sellers. Data collected via a structured questionnaire were analyzed using simple descriptive and inferential statistics. The results depicted a profitability index of 0.14% and 0.15% for wholesalers and retailers. The wholesalers' mean selling margin and selling efficiency was N159.90 and 664.01, while the mean selling margin and selling efficiency of the retailers was N169.12 and 847.14. Inadequate capital was the main restriction to fish selling. It is recommended that *Clarias gariepinus* sellers should enroll in a cooperative society to enhance access of finance, youths should venture into *Clarias gariepinus* sales since it is fruitful.

Keywords: Socio-economic, profit, *Clarias gariepinus*, constraints, sellers, Taraba state

1. Introduction
Fish manufactory and selling are one of the ancient sources of revenue for man, fish has great content of Polyunsaturated (Omega III) fatty acids, which are important in lowering blood cholesterol [1]. Oparinde and Ojo, [2] observed that fish has great dietary value with a variety of amino acids, vitamins and minerals for human nourishment.

Clarias gariepinus is an assorted cluster of ray-finned fish. *Clarias gariepinus* is mostly eaten in Nigeria mainly because of its dietary and therapeutic worth [3].

The selling occupation is one of the most important socio-economic jobs of the indigenous humans and manufacturing organizations of any vicinity [4]. It is a series of the diverse organization concerned with selling from manufacturer to purchaser with intra-ties and inter-ties. At the different phases in the selling series, fish has to be piled and unpiled, stocked and un-stocked to meet the purchaser need. Each processing amount is not much, but the sum of all burdening can be substantial subject to the extent of the selling series [5].

Consequently, a huge variance in the amount disbursed among city purchasers at the extreme of the selling series and watercourse amount at the beginning of the series can induced an immense or broader sale margin among the manufacturer and the ultimate purchaser. In spite of this, when the sale margin is huge, it can be debated that manufacturers or purchaser are being oppressed. Nevertheless, a huge margin cannot be entirely rationalized [5]. Main constituents of fish selling efficiency are lucrativeness and selling margins of the several partakers (which are the wholesalers and retailers). The investigation has revealed that there is a steady upsurge in the figure of humans concerned with fish selling as an outcome of rising inhabitants in Nigeria [5]. This is evidence of the success of the venture, as only a successful occupation could be appealing to the growing number of partakers. Selling efficiency is described as the intensification of the proportion of outturn to input in selling [6]. The selling margin, as described by Haruna *et al*. [7] is the cost disbursed for overhauls surcharge and purposes executed by the selling organizations. The efficiency of smoked *Clarias gariepinus* sales can promote its manufactory in Nigeria in order to connect the shortfall among inhabitants' utilization and manufactory.

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Thus, the purposes of the research (i) illustrate the socioeconomic position of *Clarias gariepinus* sellers, (ii) assess the success of *Clarias gariepinus* sales, (iii) find out the selling margin and selling efficiency of the *Clarias gariepinus* sellers, and (iv) pinpoint main limitations affecting *Clarias gariepinus* sales along River Taraba.

2. Materials and Methods
2.1 Study area
River Taraba is a tributary of the Benue River. River Taraba is on latitude 8°34'0" N and longitude 10°15'0" E. River Taraba takes its fountain from the elevated altitude of the Alantica hills on the Nigeria-Cameroon boundary in the mid-eastern portion of the State and gushes westwards, overlaying a space of around 265km towards the Benue basin [8]. River Taraba transcend through Gashaka. Bali and Gassol LGAs before draining into the Benue River (Figure 1). Financially viable livelihood at the watercourse is angling, cultivation of cereals, tubers and legumes. Jukun, Osobo, Wurbo and Tiv are the most populous ethnical clusters at the watercourse. Taraba State is bequeathed with substantial freshwater fishponds and watercourses, which comprises River Benue, Taraba and Donga and their streams. The State has about 500, 000 hectares of water area and 142 ecological ponds [9].

2.2 Data collection
Statistics on the socio-economic attributes of smoked *Clarias gariepinus* sellers were obtained for a period of eighteen (18) months from November 2017-April 2019. The social attributes collated were on gender, age, scholastic level, nuptial status, family size, member cooperative, ethnic cluster, while the economic attributes of smoked *Clarias gariepinus* sellers were on years of selling experience, prices of buying and selling of smoked *Clarias gariepinus,* and constraints encountered by fish sellers via structured questionnaires. Complementary facts were retrieved from journals.

2.3 Data analysis
Information gathered was examined using descriptive statistics (frequency and simple percentages). The inferential statistics was used to analyzed the gross selling margin and selling efficiencies of one kilogram of smoked *Clarias gariepinus*. Tables were also used for data representation.
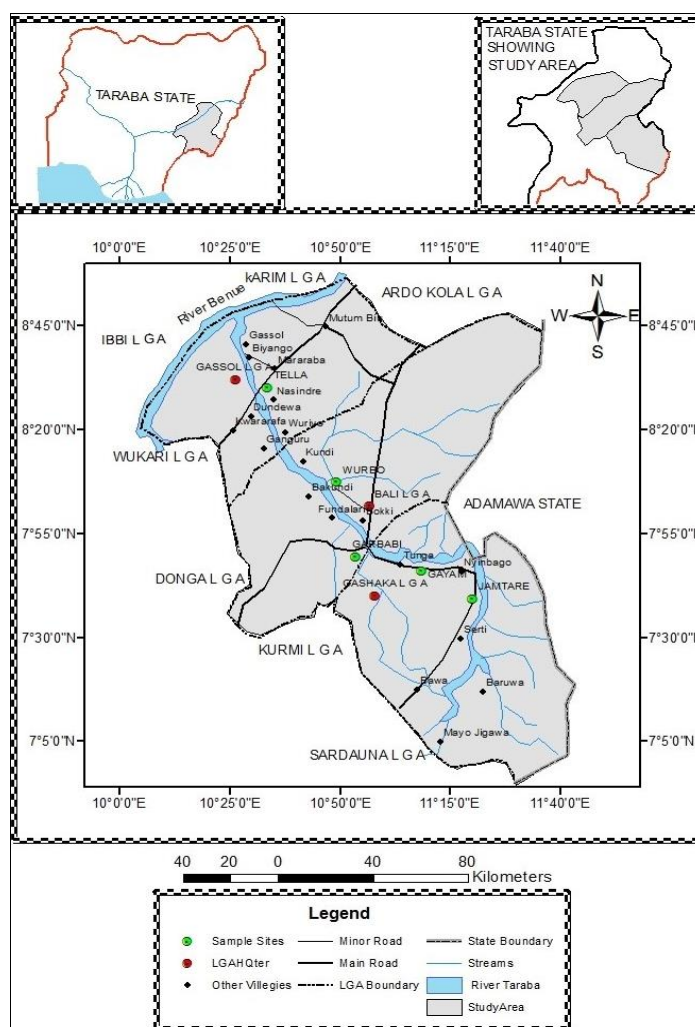

Fig 1: Map of River Taraba Showing the Study Sites

3. Results
Table 1 depict the socio-economic attributes of smoked *Clarias gariepinus* sellers along the river Taraba. The uppermost age distribution of smoked *Clarias gariepinus* sellers was 41.7% and was in the age categories of 31-40 years, then 33.3% of 41-50years and the smallest was 25% age categories of 21-30years. Gender of the smoked *Clarias gariepinus* sellers depicted 66.7% were men while the unexpended percentages (33.3%) were women. Scholastic level of smoked *Clarias gariepinus* sellers depicted 33.3% without official edification, 33.3% with basic edification, 16.7% with auxiliary edification, and about 16.7% with

tertiary edification. The nuptial status depicted 91.7% of smoked *Clarias gariepinus* sellers were wedded while 8.3% were unwedded. The family size of smoked *Clarias gariepinus* sellers indicated 50% have a family size of 6-10 individuals, then 33.3% of smoked *Clarias gariepinus* sellers have 1-5 individuals, and the smallest 16.7% have a range of 11-15 individuals. Fish selling experience pointed greater percentage of the smoked *Clarias gariepinus* sellers (41.7%) having a range of 11-15 years of experience, then 33.3% selling experience of 6-10 years, then 16.7% selling experience of 15-20 years and the smallest was 8.3% of selling experience of >20years. Smoked *Clarias gariepinus* seller's cooperative revealed a greater percentage (66.7%) are not members of any fish seller's cooperative and 33.3% are members of fish seller's cooperative. Smoked *Clarias gariepinus* sellers in River Taraba were subjugated by Wurbawa ethnic cluster with 33.3%, next by Jukun and Hausawa 25.0% each and Jibawa 16.7%.

Table 2 indicates the mean selling costs, earns for one kilogram, as well as the income evaluation of wholesale and retail of smoked *Clarias gariepinus* sales along River Taraba. The mean wholesale and retail income were N1061.68 and N1133.08 correspondingly. *Clarias gariepinus* purchasing amount has the greatest charges N884.62 (97.45%) and N943.98 (97.42%) among wholesalers and retailers, then conveyance charges with N18.00 (1.98%) and N15.98 (1.65%), then lugging and other expenses N3.00 (0.33%) and N2.00 (0.21%). The littlest selling amount was the tax value of N2.17 (0.24%) and N2.00 (0.21%) among wholesaler and retailer. The entire variable amount was N907.79 and N968.96 for wholesalers and retailers. The entire income for both wholesaler and retailer were N153.89 and N164.12 with an entire selling margin of 16.68% and 16.69%. The

profitability index was 0.14% and 0.15%, while the Operating return was 0.85% and 0.80% for wholesale and retail correspondingly.

Table 3 indicates the wholesale selling margin and selling efficiency of smoked *Clarias gariepinus* fish in the certain marketplaces. The total selling margin for one kilogram of smoked *Clarias gariepinus* ranges from N128.77 in Wurbo marketplace to N177.58 in Tella marketplace, with the entire mean net margin of N153.90. Mean processing amount was N23.17, and Tella marketplace having the greatest amount N26.38, then Jamtari marketplace N24.10, then Garbabi marketplace N23.62, then Gayam marketplace N21.56 and the littlest were Wurbo marketplace N20.17. The sale efficiency was excessive in Garbabi marketplace (705.84%), then Gayam marketplace (689.15%), then Tella marketplace (673.16%), then Wurbo marketplace (638.42%) and the littlest was Jamtari marketplace (613.48%). The mean selling efficiency along River Taraba was 664.01%.

Table 4 revealed the retail selling margin and selling efficiency of smoked *Clarias gariepinus* in the certain marketplaces. The earn selling margin for one kilogram of smoked *Clarias gariepinus* varies from N139.81 at Wurbo marketplace to N185.78 at Tella marketplace with the entire mean earn margin of N169.12. The mean processing price was N19.98. Among these, Tella marketplace was having the greatest amount N21.02, then Wurbo marketplace N20.15, then Jamtari marketplace N20.08, then Garbabi marketplace N19.38 and the littlest were Gayam marketplace N19.26. The sales efficiency was excessive in Gayam marketplace (916.61%), then Garbabi marketplace (889.22%) next was Tella marketplace (883.82%), Jamtari marketplace (852.24%) and the littlest was Wurbo marketplace (693.84%). The mean selling efficiency was 847.14%.

Table 1: Socio-economic attributes of Smoked *Clarias gariepinus* sellers along River Taraba.

Variables	Category	Frequency	Percentage
Age	21-30	15	25.0
	31-40	25	41.7
	41-50	20	33.3
	Total	60	100.0
Gender	Male	40	66.7
	Female	20	33.3
	Total	60	100.0
Scholastic Level	NFE	20	33.3
	FSLC	20	33.3
	SSCE	10	16.7
	T. Edu	10	16.7
	Total	60	100.0
Nuptial Status	Married	55	91.7
	Single	5	8.3
	Total	60	100.0
Family Size	1-5	20	33.3
	6-10	30	50.0
	11-15	10	16.7
	Total	60	100.0
Selling Experience	6-10	20	33.3
	11-15	25	41.7
	15-20	10	16.7
	>20	5	8.3
	Total	60	100.0
Members Cooperation	Members	20	33.3
	Non	40	66.7
	Total	60	100.0
Ethnic Cluster	Jukun	15	25.0
	Wubawa	20	33.3
	Jibawa	10	16.7
	Hausawa	15	25.0

	Total	60	100.0

Table 2: Average selling price, gain for one kilogram and income evaluation of smoked *Clarias gariepinus* along River Taraba.

Variables Total Sales N	Wholesale 1061.68	Retail 1133.08
Expenditures (Variable cost)		
Fish purchasing price (₦)	884.62 (97.45%)	943.98 (97.42%)
Conveyance price (₦)	18.00 (1.98%)	15.98 (1.65%)
Market tax (₦)	2.17 (0.24%)	2.00
lugging and other price (₦)	3.00 (0.33%)	2.00
Total Variable cost TVC (₦)	907.79	968.96
Net Income (₦) (NI) =TR-TC	153.89	169.12
Selling margin %	16.68	16.69
Profitability index (PI) %	0.14	0.15
Operating return (OR) %	0.85	0.8

Table 3: Wholesale Selling Margin and selling efficiency of Smoked *Clarias gariepinus* fish in a certain marketplace.

Marketplace	Price of fish (₦/kg)	Selling amount ₦/(kg)	Processing amount (₦/kg)	Selling margin (₦/kg)	Earn Margin (₦/kg)	Sale efficiency (%)
Jamtari	850.22	1022.17	24.10	171.95	147.85	613.48
Gayam	875.12	1045.26	21.56	170.14	148.58	689.15
Garbabi	900.06	1090.40	23.62	190.34	166.72	705.84
Wurbo	816.51	965.45	20.17	148.94	128.77	638.42
Tella	981.17	1185.13	26.38	203.96	177.58	673.16
Mean	884.62	1061.68	23.17	177.06	153.90	664.01

Table 4: Retail Selling Margin and Selling efficiency of Smoked *Clarias gariepinus* in a certain marketplace.

Marketplace	Price of fish (₦/kg)	Selling amount ₦/(kg)	Processing amount (₦/kg)	Selling margin (₦/kg)	Earn Margin (₦/kg)	Sales efficiency (%)
Jamtari	925.31	1116.52	20.08	191.21	171.13	852.24
Gayam	943.64	1139.44	19.26	195.80	176.54	916.61
Garbabi	972.18	1163.89	19.38	191.71	172.33	889.215
Wurbo	864.36	1024.32	20.15	159.96	139.81	693.846
Tella	1014.43	1221.23	21.02	206.80	185.78	883.82
Mean	943.98	1133.08	19.98	189.10	169.12	847.14

3.1 Constraints of Smoked *Clarias gariepinus* sellers along River Taraba.

Table 5 indicate the constraints of Smoked *Clarias gariepinus* Sellers along River Taraba. The most worrisome constraint associated with fish selling occupation as expressed by fish sellers along River Taraba was inadequate capital (21.67%) then high transportation and price instability with 18.33% each, next was seasonality of fish supply and inadequate storage facilities with 15.00% each and the littlest was absence of access to loan (11.67%).

Table 5: Constraints of Smoked *Clarias gariepinus* Sellers along River Taraba.

Constraints	Frequency	Percentage (%)
Inadequate capital	13	21.67
High cost of transportation	11	18.33
Price instability	11	18.33
Seasonality of catfish supply	9	15.00
Inadequate storage	9	15.00
Absence of access to loan	7	11.67
Total	60	100

4. Discussion

Age distribution of Smoked *Clarias gariepinus* Sellers along River Taraba showed 41.7% were around 31-40 years. This means greater number of the fish sellers were matured people who can make decisions about their business. The result agrees with Girei *et al*., [10] who presented a larger number of fish sellers of 62% at the age category of 20-49 years.

Gender of Smoked *Clarias gariepinus* Sellers displayed 66.6% were men and the unexpended percentage (33.3%) were women. The result disagrees with the findings [11] who reported that processed fish sellers were subjugated by women than men. However, the finding corroborates with the study of Amos [12] who observed that men were largely represented in catfish selling at Wamba LGA of Nassarawa State with 86.50%.

Scholastic level of smoked *Clarias gariepinus* Sellers showed that 33.3% were having basic edification, 16.7% auxiliary edification, and 16.7% tertiary edification. The suggestion here is that the scholastic level of smoked *Clarias gariepinus* Sellers along River Taraba is deficient. It is generally believed that a scholar with vast knowledge will perform better in business than scholar with low knowledge. Knowledgeable scholars are more ready to accept new information and changes that can facilitate increases in business hence their successes than less knowledgeable scholars. The result is in consonance with Mohammed *et al.,* [13] who reported that edification play a vital function in agriculture and the advancement of any nation.

Nuptial category depicted 91.7% of the smoked *Clarias gariepinus* Sellers were wedded. The result agrees with Agbebi and Adetuwo [1] who reported 91.3% wedded fish sellers. This entail that smoked *Clarias gariepinus* Sellers in River Taraba were subjugated by wedded people considered sensible and respected by culture.

Family size of smoked *Clarias gariepinus* Sellers showed that 50% are having around 6-10 members. The result support Agbebi and Adetuwo [1] who reported greater percent (46.3%) of the fish sellers with a family range of 6-10 individuals. Families with large number of individuals make more profit than family with few individuals, this is because large family individuals will all participate in the selling business at various points. The result is in consonance with Quartey [14] who observed that large number of individuals in the family increased manufactory occupation and profit making.

Fish selling experience exhibited a substantial number of the smoked *Clarias gariepinus* Sellers as 41.7% having experience of 11-15 years. The result is in consonance with Njoku and Offor [3] who reported 63.3% of fish sellers with 11- 20 years' experience. The results entail that smoked *Clarias gariepinus* Sellers along River Taraba have sufficient experience in fish selling.

Fish seller's cooperative revealed a larger percentage of 66.7% who are not members of fish seller's cooperative on the other hand 33.3% were members. The aim of any cooperative is to ensure the welfare of its members. The cooperative usually gives financial assistance to members, they rub minds together concerning their business. The result suggests that many of the fish sellers along River Taraba cannot be beneficiaries of cooperative financial assistance and the like. The result is at variance with Odebiyi [15] who displayed that associations help associates but cannot be possible when somebody live as an island.

Smoked *Clarias gariepinus* Sellers along River Taraba are subjugated by Wurbawa ethnic cluster with 33.3%, next by Jukun and Hausawa 25.0% each and Jibawa 16.7%. The result of the constraints encountered by smoked *Clarias gariepinus*

Sellers along River Taraba concurred to what has been described by Agbebi and Fagbote [16,] Bassey *et al.,* [17] and Baba *et al.,* [18].

The net income (gross margin) for both wholesalers and retailers were N153.89 and N164.12 plus selling margin 16.68% and 16.69%. Retailer's gain was greater compared with wholesalers, the reason being that purchasers purchase small number of fish at a higher price from the retailers. Another point is the large amount of money spent by wholesalers to convey fish from the waterways, which affects their total earnings. The result differs with Gaya *et al.,* [19] who presented a greater selling margin in favor of wholesalers over retailers at Adamawa State. The mean profitability index (PI) of wholesalers and retailers among marketplaces were 0.14% and 0.15% revealing that a wholesaler earn 14 kobo and a retailer earn 15 kobo for every naira they spent in the fish business. Operation ratio (OR) of wholesalers (0.85%) and retailers (0.80%) revealed a large income compared to all the expenses. The meaning is that fish selling along River Taraba is profitable. The result support what was presented by Olagunji *et al.,* [20] that processed fish selling is a profit-making venture?

The wholesale net selling margin for onr kilogram of smoked *Clarias gariepinus* varies from N128.77 at Wurbo marketplace to N177.58 at Tella marketplace, having a sum mean net margin of N153.90. The mean processing amount was N23.17. Among all the marketplaces, Tella marketplace has the larger amount (N26.38) and the littlest was Wurbo marketplace (N20.17) this is because Tella marketplace is along a federal road characterized by several task regulations of income by community mediators than remote Wurbo marketplace. The selling efficiency was greater at Garbabi marketplace (N705.84%), then Gayam marketplace (N689.15%) and the littlest was at Jamtari marketplace (N613.48%). The mean selling efficiency was 664.01% which implies there is the presence of an effective fish assessment along River Taraba. This result support what was stated by Bassey *et al.,* [17] that selling efficiency exist at four certain marketplaces of Akwa Ibom State, Nigeria.

The high retail net margin of smoked *Clarias gariepinus* in Tella (N185.78) can be attributed to location because Tella marketplace is situated along the main federal road thus getting travelers' benefaction. The littlest the was Wurbo marketplace (N139.81), this is because it is situated in a far remote area from the highway combined with the pathetic road that discourages patronage. The mean net margin was N169.12 and the mean processing amount was N19.98. Further than, the retail fish sales are to a greater extent effective at Gayam marketplace (916.61%) then Garbabi marketplace (889.26%) and the littlest been Wurbo marketplace (693.85%). The mean selling efficiency was 847.14%, implying effective fish assessment. The findings conform with Bassey *et al.,* [17] who stated that selling efficiency exist at four certain marketplaces of Akwa Ibom State, Nigeria.

The constraints encountered by smoked *Clarias gariepinus* sellers along River Taraba are placed in harmony with their seriousness as described by the fish sellers. The eminent constraint of fish sellers along River Taraba is inadequate capital with 21.67%. Fish selling call for a huge sum of money for the business in order to get sensible gain. The result agrees with Agbebi and Adetuwo [1]. Huge expense of conveyance ranked second due to pathetic motorway as well as price instability of smoked *Clarias gariepinus* confronted by fish sellers. The outcome support the National Bureau of Statistic report that fluctuation in the cost of commodity exist in the absence of guideline machinery. The third constraint was the seasonality of fish supply and inadequate storage facilities. The selling of smoked *Clarias gariepinus* prospers more during dry season than wet season and Fish delicate quality is a hindrance, while the paucity of loan is the littlest constraint. This difficulty of finding loan is due to absence of awareness by most of the fish sellers on how to secure loans from banks and absence of a strong cooperative that can secure loans for its members. The results conform with what has been reported by Akankali and Jamabo [21,] Njokur and Offor [3,] and Baba *et al.* [18].

5. Conclusion
The study showed larger percentage of fish sellers were around 31-40years (41.7%) and 66.7% were men. Scholastic level revealed 33.3% with first school leaving certificate and wedded fish sellers were 91.7%. The highest family size were 6-10 members (50%). The selling experience revealed 11-15 years (41.7%) as the highest while 66.7% were non-members of cooperative. The populated ethnic group of the fish sellers were Wurbawa (33.3%). Wholesaler earn 14 kobo and a retailer earn 15 kobo for every naira they spent in fish selling business. Operation ratio (OR) of wholesalers (0.85%) and retailers (0.80%) revealed large income compared to all the expenses. The mean selling net margin for wholesalers was N153.90 and retailers was N169.12 while the mean selling efficiency was 664.01% and 847.14% for wholesalers and retailers correspondingly. This implies the presence of an effective fish assessment along River Taraba. Constraints encountered by fish sellers are inadequate capital, high cost of transport, price instability, and seasonality of fish supply, inadequate storage facilities and absence of loan.

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