

Research Article

Assessment of the Extent of Compliance and Enforcement of Inland Fisheries Laws in Rivers State Senatorial, Nigeria

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Abstract

Fisheries laws and policies are made to ensure healthy and sustainable fishing practices and aquatic resources. Thus, the objective of this study was to assess the extent of compliance, implementation and enforcement of existing inland fisheries laws and policies in fishing communities in Rivers State, Nigeria. A questionnaire was structured to get relevant responses from a total of two hundred and fifty fisher-folks in three senatorial zones (Rivers South-South, Rivers West and Rivers East) in Rivers State. The data generated from this study area was analysed using descriptive and inferential statistical methods. The laws and policies considered and their results were: Power to lease water (2.9 ± 0.86), Licensing to fish (2.6 ± 0.85), Registration of fisher folks and gears (2.9 ± 0.89), Permits to fish with certified standard gears (2.7 ± 0.85), Prohibition on use of explosive and chemicals (2.7 ± 0.88), Prohibition on use of certain nets, cages, traps, fixed engines, except in private water bodies (2.7 ± 0.92), Power to arrest (2.8 ± 0.84), Power to penalties (2.7 ± 0.87), Protection of the removal of certain species of fish (2.6 ± 0.84), and Power on exposure on sale and marketing of fish (2.8 ± 0.74). Means and standard deviations of implementation and enforcement of Inland Fisheries Laws were: Power to lease water (3.1 ± 0.89), Licensing to fish (2.9 ± 0.94), Registration of fisherfolks and gears (2.8 ± 0.97), Permit to fish with certified standard gears (2.9 ± 0.99), Prohibition on use of certain nets, cages, traps fixed engines except in private water bodies (2.9 ± 0.79), Power to arrest (2.8 ± 0.85), Power to penalties (2.8 ± 0.85), Protection for removal of certain species of fish (2.7 ± 0.85), Power on exposure to sale and marketing of fish (3.2 ± 0.97) and Prohibition on use of barriers (4.3 ± 0.89). The results indicate that compliance, implementation and enforcement of inland fisheries laws were relatively very low. Therefore, more awareness programmes, engagements, training sessions and incentives should be done for the fisher folks in these senatorial zones by the Local and State governments. Healthy and sustainable fishing practices are achieved where fisheries laws and policies are complied.

Keywords

Compliance, Implementation, Enforcement, Inland Fisheries Laws, Socio-Economic Variation Analysis

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1. Introduction

Fisheries laws are efforts geared towards achieving effective fishing effort, that is input control or restrict total catch that is output control to a predefined limit. In other words they are imposed on a fishery to arrive at a strategic design to achieve predefined objectives [1]. Lunenburg [2], and Etzioni [3] in what they called compliance theory, stated any organization can be classified by the type of power they use to direct the conduct of their members and the type of participation of the partakers. In most organizations, types of power and participation are grouped in three expectable arrangements: coercive-alienate, utilitarian-calculative, and normative-moral. Of course, a few establishments pool two or even all three types. Nonetheless establishment officials who attempt to use types of power that are not appropriate for the environment can reduce administrative effectiveness. Fisheries sectors tend to be normative establishments. According to this logic, oppressive use of coercive and utilitarian power (top to bottom) with government agencies (Federal Department of Fisheries) and fishers can be dysfunctional.

The over-fishing resulting from open access to fish resources is often addressed with regulations that restricts gears and vessel operations, setting of minimum fish-size to be caught, quality assurance inspection of handling, processing, storage and sales of fish and fish products, time and area closure and catch quotas and requirement for licensing of vessels and fishing [4, 5]. Fishers like most regulated economic agents are typically controlled by legislation, monitoring, surveillance and enforcement. The most expensive element in fisheries management programs is compliance and enforcement. Compliance with fisheries regulations is often far from complete, seriously affecting effectiveness in management of fisheries resources [6]. This raises two fundamental questions, which are: Are there ways to improve on the cost effectiveness of both traditional and modern enforcement; and are there ways to secure compliance without heavy reliance on costly enforcement?

Most modern analysis of compliance behavior centers on deterring rational individuals from violating these rules [7]. John [8] reported that creating value through compliance and enforcement explored how strengthening compliance with environmental requirement creates both public and private values. He emphasized the need for a level playing ground, the rule of law; to ensure environmental benefits, the strong independent judiciary and the need for international cooperation. Justice [9] advocated that good governance and rule of law is strong instrument for sustainable development, therefore, independent judiciary and incorruptible law enforcement agents are required for compliance with fisheries regulations. Allison et al [10] reviewed the Status of Fisheries Regulation in Nigeria and reported ineffectiveness in compliance, implementation and enforcement. Hence, finding in this work on compliance would be a new addition to legal jurisprudence in fisheries laws and management. There are limited documentations on efforts made towards compliance, implementation and enforcement of fisheries laws in Rivers State.

2. Materials and Methods

2.1. Study Area

The study was carried out in Rivers West, Rivers East and Rivers South-East Senatorial Districts that make Rivers State, Nigeria. These Senatorial Districts are mostly surrounded by mangrove swamps, tropical rainforest and many rivers [1]. The riverine part of Rivers State has three hydro-vegetation zones such as beach ridge, and fresh water. Each zone has its own characteristic and composition, with fresh waters encompassing the upper and floodplains of the Niger Delta [11]. The strategic hydrological condition of the zones allows industrial, artisanal and cultured fisheries activities.

2.2. Data Collection and Analysis

Primary data were collected from the fisherfolk from in the study area using two hundred and fifty questionnaires. The laws and policies considered in the questionnaires were on power of water lease, licensing to fish, registration of fishers and gears, prohibitions on use of explosives and chemicals, prohibitions on use of certain nets, cages, traps, fixed engines, except in private water bodies, permits to fish with certified standard gears, power to arrest, power to penalties, protection for removal of certain fish species, power on exposure, sale and marketing of fish and prohibition on use of barriers. The data from the respondents were analyzed using the descriptive and inferential statistical methods.

3. Results

3.1. Respondents' Extent of Compliance to the Fisheries Laws

Table 1 displays the extent of compliance with inland fisheries laws. It shows that the mean for power to use water was 2.90, licensing to fish was 2.60, registration of fishers and fishing gears was 2.90, permits to fish with certified gears was 2.70, prohibition of use of explosive and chemicals was 2.60, prohibition on use of certain nets, cages, traps, fixed engines except in private water bodies was 2.70, power to arrest was 2.70, power of penalties was 2.80, protection of removal of certain species of fish was 2.70, power to exposure and marketing of fish was 2.60, prohibition on use of barriers was 2.80. Using a Likert 5-point scale with the standard reference mean score of 3.0 decision rule, all the respondents were rejected, since the grand mean (2.70) was less than 3.0. The result implies that the extent of compliance is low in the three senatorial districts studied.

Table 1. Extent of Compliance with the Fisheries Laws and Policies in the State.

Extent of Compliance with Fisheries Law	Respondent Frequencies					Total (N)	Mean $\pm$ Std. Dev $\bar{x} \pm \sigma$	Remark
	NA	SA	MA	VA	EA			
	1	2	3	4	5			
Power to lease water	19	40	136	50	5	250	2.9 $\pm$ 0.86	Rejected
Licensing to Fish	20	89	110	26	5	250	2.6 $\pm$ 0.85	Rejected
Registration of Fishers/Gears	10	69	115	45	11	250	2.9 $\pm$ 0.89	Rejected
Permit to Fish with Certified Standard Gears	25	65	121	39	-	250	2.7 $\pm$ 0.85	Rejected
Prohibition on Use of Explosives/Chemicals	25	85	105	35	-	250	2.6 $\pm$ 0.85	Rejected
Prohibition on Certain Nets, Cages, Traps, etc.	20	75	110	41	4	250	2.7 $\pm$ 0.88	Rejected
Power to Arrest	25	70	110	40	5	250	2.7 $\pm$ 0.92	Rejected
Power of Penalties	15	75	120	35	5	250	2.8 $\pm$ 0.84	Rejected
Protection for Removal of Certain Fish Species	15	100	95	34	6	250	2.7 $\pm$ 0.87	Rejected
Power on Exposure, Marketing of Fish	21	80	120	24	5	250	2.6 $\pm$ 0.84	Rejected
Prohibition on the Use of Barriers	5	76	134	30	5	250	2.8 $\pm$ 0.74	Rejected
Total	200	824	1276	399	51	2750	2.7 $\pm$ 0.86	Rejected
Standard reference means $\bar{X} = 3.0$								

Source: Field Survey, 2025.

3.2. Extent of Implementation and Enforcement of Extant Inland Fisheries Laws

Table 2 displays mean scores of the extent of implementation and enforcement of fisheries laws and policies in the study area. The results shows that the mean for power to lease was 3.1, licensing to fish was 2.9, registration of fishers/gears 2.8, permit to fish with certified standard gears was 2.9, prohibition on certain nets, cages, traps, etc was 2.8, power to arrest was 2.8, power of

penalties was 2.8, protection for removal of certain fish species was 3.2, power on exposure, marketing of fish was 4.3, and prohibition on the use of barriers was 3.1. Using a Likert 5-point scale with the standard reference mean score of 3.0 decision rule, four fisheries laws and policies (Power to lease water, Protection for Removal of Certain Fish Species, Power on Exposure, Marketing of Fish, Prohibition on the Use of Barriers) had grand mean scores greater than 3.00, thus accepted, while other respondents were less than 3.00, thus rejected. The result implies there is implementation and enforcement to an extent.

Table 2. Lev Extent of Implementing and Enforcing of Extant Inland Fisheries Laws and Policies.

Extent of Implementation/ Enforcement of Fisheries Laws	Respondent Frequencies					Total (N)	Mean $\pm$ Std. Dev $\bar{x} \pm \sigma$	Remark
	NA	SA	MA	VA	EA			
	1	2	3	4	5			
Power to lease water	5	50	140	30	25	250	3.1 $\pm$ 0.89	Accepted
Licensing to Fish	10	75	130	10	25	250	2.9 $\pm$ 0.94	Rejected
Registration of Fishers/Gears	20	75	114	20	21	250	2.8 $\pm$ 0.997	Rejected
Permit to Fish with Certified Standard Gears	5	75	105	45	20	250	2.9 $\pm$ 0.99	Rejected

Extent of Implementation/ Enforcement of Fisheries Laws	Respondent Frequencies					Total (N)	Mean $\pm$ Std. Dev $\bar{x} \pm \sigma$	Remark
	NA	SA	MA	VA	EA			
	1	2	3	4	5			
Prohibition on Use of Explosives/Chemicals	5	70	135	30	10	250	2.9 $\pm$ 0.79	Rejected
Prohibition on Certain Nets, Cages, Traps, etc.	15	69	135	20	11	250	2.8 $\pm$ 0.85	Rejected
Power to Arrest	15	59	136	25	15	250	2.8 $\pm$ 0.85	Rejected
Power of Penalties	15	79	125	21	10	250	2.7 $\pm$ 0.85	Rejected
Protection for Removal of Certain Fish Species	6	40	125	44	35	250	3.2 $\pm$ 0.97	Accepted
Power on Exposure, Marketing of Fish		11	39	60	140	250	4.3 $\pm$ 0.89	Accepted
Prohibition on the Use of Barriers	5	50	140	30	25	250	3.1 $\pm$ 0.89	Accepted
Total	96	603	1184	305	312	2500	3.1 $\pm$ 1.01	Accepted
Standard reference means $\bar{X} = 3.0$								

Source: Field survey 2025.

3.3. Variation of Mean and Standard Deviation of Level of Compliance with Inland Fisheries Laws and Policies in the Study Area

Tables 3-10 show the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area by Sex, Age, Marital Status, Level of Education, Major Occupation, Fishing Experience, Sector of Fisheries and Basis of fishing).

Table 3. Analysis of Extent of Compliance to Fisheries Laws by Sex.

Level	Sex	Number	Mean $\pm$ Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	M	175	2.69 $\pm$ 0.707b	0.053442	2.582834	2.793789
2	F	75	2.90 $\pm$ 0.462a	0.053312	2.790743	3.003196
Grand Total		250	2.80 $\pm$ 0.584			

Means with different superscripts a, b, c, d in the same column is significantly different at $p=0.05$ (Tukey HSD).

Table 4. Analysis of Extent of Compliance to Fisheries Laws by Age.

Level	Age	Number	Mean $\pm$ Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	16-25	5	3.45 $\pm$ 4.97E-16a	2.22E-16	3.454546	3.454546
2	26-35	40	2.52 $\pm$ 0.824b	0.130355	2.259059	2.786396
3	36-45	105	2.72 $\pm$ 0.615ab	0.059987	2.603986	2.841901
4	46-55	70	2.78 $\pm$ 0.604ab	0.072207	2.635172	2.92327
5	Others	30	2.97 $\pm$ 0.522a	0.09533	2.774726	3.164668
Grand Total		250	2.89 $\pm$ 0.513			

Means with different superscripts a, b, c, d in the same column is significantly different at $p=0.05$ (Tukey HSD)

Table 5. Analysis of Extent of Compliance to Fisheries Laws by Marital Status.

Level	Marital Status	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	Married	210	2.77±0.681ab	0.046982	2.682272	2.867511
2	Unmarried	25	2.45±0.281b	0.056285	2.338378	2.570713
3	Divorced	10	2.64±0.383ab	0.121212	2.362163	2.910565
5	Widowed and Others	5	3.45±4.97E-16a	2.22E-16	3.454546	3.454546
Grand Total		250	2.83±0.336			

Means with different superscripts a, b, c, d in the same column is significantly different at p=0.05 (Tukey HSD)

Table 6. Analysis of Extent of Compliance to Fisheries by Level of Education.

Level	Level of Education	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	Informal	15	2.52±0.566a	0.146228	2.201523	2.82878
2	Primary	20	2.61±0.387a	0.086464	2.432665	2.794608
3	Secondary	105	2.69±0.520a	0.050762	2.591978	2.793304
4	Tertiary	110	2.86±0.782a	0.074524	2.715932	3.011341
Grand Total		250	2.67±0.564			

Means with different superscripts a, b, c, d in the same column is significantly different at Means with different superscripts a, b, c, d in the same column, are significantly different at p=0.05 (Tukey HSD).

Table 7. Analysis of Extent of Compliance to Fisheries Laws by Major Occupation.

Level	Major Occupation	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	Fisher	145	2.79±0.554a	0.04597	2.702241	2.883966
2	Farmer	10	2.36±0.383ab	0.121212	2.089436	2.637837
3	Civil Servant	60	2.93±0.704a	0.090925	2.749877	3.113759
4	Public Servant	30	2.39±0.863b	0.15766	2.071488	2.716391
5	None	5	2.27±0.000ab	0.000000	2.272727	2.272727
Grand Total		250	2.55±0.501			

Means with different superscripts a, b, c, d in the same column, are significantly different at p=0.05 (Tukey HSD)

Table 8. Analysis of Extent of Compliance to Fisheries Laws by Fishing Experience.

Level	Fishing Experience	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	1-5 year	20	2.06±0.896b	0.200315	1.62619	2.464719
2	6-10 year	60	2.93±0.711a	0.091819	2.748088	3.115548

Level	Fishing Experience	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
3	11-15 years	65	2.80±0.470a	0.058312	2.680712	2.913693
4	16-20 years	50	3.09±0.505a	0.07137	2.947487	3.234332
5	21-25 and above years	55	2.45±0.438b	0.059084	2.327824	2.564738
Grand Total		250	2.66±0.604			

Means with different superscripts a, b, c, d in the same column, are significantly different at $p=0.05$ (Tukey HSD)

Table 9. Analysis of Extent of Compliance to Fisheries Laws by Sector of Fisheries.

Level	Sector of Fisheries	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	Artisanal	55	2.70±0.727a	0.097993	2.506015	2.898944
2	Aquaculture	105	2.79±0.679a	0.066273	2.656458	2.9193
3	Industrial	60	2.84±0.562a	0.072497	2.695844	2.985974
4	Commercial	25	2.65±0.475a	0.094912	2.458657	2.850434
Grand Total		245	2.75±0.610			

Means with different superscripts a, b, c, d in the same column is significantly different at $p=0.05$ (Tukey HSD).

Table 10. Analysis of Extent of Compliance to Fisheries Laws by Basis for Fishing.

Level	Basis for fishing	Number	Mean±Std Dev	Std Err Mean	Lower 95%	Upper 95%
1	Full-Time	190	2.78±0.647a	0.046922	2.687347	2.872461
2	Part-Time	55	2.73±0.642a	0.086518	2.553815	2.90073
Grand Total		245	2.75±0.644			

Means with different superscripts a, b, c, d in the same column is significantly different at $p=0.05$ (Tukey HSD)

Table 3 shows the mean and standard deviation scores level 1 and 2 were 2.69 ± 0.707 and 2.90 ± 0.462 . There is no significant difference in the compliance to fisheries laws by sex. Table 4 shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area (Age). The mean and standard deviation scores for extent of compliance to inland fisheries laws and policies by Age were 3.45 ± 0.9716 , 2.52 ± 0.824 , 2.72 ± 0.615 , 2.78 ± 0.604 and 2.97 ± 0.522 . Levels 1 and 5 showed no significant difference, while level 3 and 4 showed slight difference and level 2 showed differences in extent of compliance.

Table 5 shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area (Marital status). The mean and standard deviation scores as 2.77 ± 0.681 , 2.45 ± 0.281 , 2.64 ± 0.383 , and 3.45 ± 0.9716 , level 4 indicated no significant differences, level 1 and 2 showed slight difference, while 2 showed difference. Table 6

shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area (level of education). The mean and standard deviation scores of the extent of compliance to inland fisheries in level 1-4 by level of education are: 2.52 ± 0.566 , 2.61 ± 0.387 , 2.69 ± 0.520 and 2.86 ± 0.782 . It shows that there is no significant difference in level of education in compliance with laws in the study area.

Table 7 shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area (Major occupation). From Table 7, mean and standard deviation scores from level 1 - 4 by major occupation were $2.79\pm0.554a$, $2.36\pm0.383ab$, 2.93 ± 0.704 , $2.39\pm0.863b$ and $2.27\pm0.000ab$. Level 1 and 3 showed no significant difference, while level 2 and 5 showed slight significant difference, level 4 showed significant difference.

Table 8 shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in

the study area (Years of fishing experience). The mean and standard deviation scores by fishing experience were $2.06 \pm 0.896b$ $2.93 \pm 0.711a$ $2.80 \pm 0.470a$ $3.09 \pm 0.505a$ $2.45 \pm 0.438b$. Level 2, 3 and 4 showed no significant difference, level 1 and 5 showed significant differences in extent of compliance with inland fisheries laws and policies in the area.

Table 9 shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area (Sector of fisheries). The mean and standard deviation scores by the sector of fisheries were $2.70 \pm 0.727a$

$2.79 \pm 0.679a$ $2.84 \pm 0.562a$ and $2.65 \pm 0.475a$. There was no significant difference in the extent of compliance to inland fisheries and policies in the study area.

Table 10 shows the variation of mean and standard deviation of level of compliance to inland fisheries laws and policies in the study area (Basis for fisheries). The mean and standard deviation scores by basis of fishing were $2.78 \pm 0.647a$ and 2.73 ± 0.642 . There was no significant difference in extent of compliance with inland fisheries laws and policies in the study area.

Table 11. Null Hypothesis for Compliance, Implementation and Enforcement of Existing Inland Fisheries Laws and Policies.

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Sex	1	0.41481	0.414815	0.8529	0.3566
Error	248	120.6198	0.48637		
C. Total	249	121.0346			
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Age	4	0.77979	0.194949	0.3972	0.8106
Error	245	120.2548	0.490836		
C. Total	249	121.0346			
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Marital Status	3	2.08254	0.69418	1.4356	0.2329
Error	246	118.952	0.483545		
C. Total	249	121.0346			
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Level of Education	3	2.29388	0.764627	1.5841	0.1938
Error	246	118.7407	0.482686		
C. Total	249	121.0346			
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Major Occupation	4	0.76181	0.190453	0.388	0.8172
Error	245	120.2728	0.490909		
C. Total	249	121.0346			
Years of Fishing Experience	4	24.79855	6.19964	15.7832	<.0001*
Error	245	96.23601	0.3928		
C. Total	249	121.0346			
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Sector of Fisheries	3	4.32	1.44	3.2396	0.0228*
Error	241	107.123	0.44449		
C. Total	244	111.443			
Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Basis for fishing	1	0.09852	0.098517	0.215	0.6433
Error	243	111.3445	0.458208		

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
C. Total	244	111.443			

H₀: there is no significant differences in the compliance, implementation and enforcement of existing inland fisheries laws and policies.

Table 11 shows the null hypothesis for extent of compliance, implementation and enforcement of existing inland fisheries laws and policies of respondents for the eight variables: sex, age, marital status, level of education, major occupation, years of experience, sector of fisheries, and basis of fisheries. For sex, the calculated sum of square 0.41481 and mean square 0.414815 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for sex is 0.8529 and Prob >F is 0.3566 at 1 degree of freedom a 0.05 level of significant. For, age, the calculated sum of square 0.77979 and mean square 0.8529 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for age is 0.3972, and Prob >F is 0.8106 at 4 degree of freedom a 0.05 level of significant. For marital status, the calculated sum of square 2.08254 and mean square 0.69418 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for marital status is 1.4356, > Prob F is 0.2329 at 1 degree of freedom a 0.05 level of significant.

For level of education, the calculated sum of square 2.29388 and mean square 0.764627 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for level of education is 1.5841> Prob F is 0.1938 at 3 degrees of freedom a 0.05 level of significant. For major occupation, the calculated sum of square 0.76181 and mean square 0.190453 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for major occupation is 0.3887, < Prob F is 0.3899 at 4 degrees of freedom a 0.05 level of significant*. For years of experience, the calculated sum of square 24.79855 and mean square 6.19964 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for years of experience is 15.7832> Prob F is 0.0001* at 4 degrees of freedom a 0.05 level of significant. For sector of fisheries, the calculated sum of square 4.32 and mean square 1.44 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for sector of fisheries is 3.2396 > Prob F is 0.0228* at 3 degrees of freedom a 0.05 level of significant. For basis of fisheries, the calculated sum of square 0.09852 and mean square 0.098517 had strong feeling on the awareness of existing inland fisheries laws and policies It shows that F ratio for basis of fishing is 0.215, and Prob < F is 0.6433* at 1 degree of freedom a 0.05 level of significant. Thus, the result indicates that there are no significant differences in the compliance, implementation and enforcement of existing inland fisheries laws and policies.

4. Discussion

According to Sutinen et al. [6] compliance to fisheries regulations is often far from complete, seriously affecting effectiveness in management of fisheries resources. Fisheries policy, including technical measures and regulations has largely failed to prevent over-exploitation and the collapse of some important fish species, and this has been attributed to the lack of compliance with fisheries regulations by resource users, glitches in management and top-down control of fisheries by the government. The results from this research shows that there was low extent of compliance in the study area. Enaikele et al [12] reported low compliance to fishing regulations in Lagos State, Nigeria. According to the authors, only about 34% of the fishers conform to the provisions of fishing regulations while 66% are not conforming to the regulations guiding fishing in the area. They further stated that the fishers did not perceive the regulations as capable of addressing the sustainable supply and exploitation of fisheries resources.

The findings of this research agree with Sutinen et al [6], Allison et al [10] and Ghambi et al [13] and Sogbesan et al. [14], who in their different studies, identified low compliance to fisheries laws. Ghambi et al [13] remarked that the future sustainability and benefits from fisheries have been negatively affected by illegal fishing activities and noncompliance of fisheries regulations which has become a global problem thereby presenting acute threat to regeneration of fish stocks. Furthermore, fisher-folks do not see the need to obey the components of inland fisheries laws, reason being that they have a non-empirical explanation for the reduction of stocks and how to achieve abundant supply of fisheries resources. It was revealed that the penalties for unsustainable fishing practices are too cheap to have any serious impact on defaulters, that is why fishers violate the fishing regulations. Poor monitoring, surveillance and enforcement of the regulations by government agencies are responsible for low compliance in area of study.

The overall goal of fisheries legislation and regulation in federal, state and local is that through implementation and enforcement of these Laws and regulations, the biodiversity, fisherman catches, fish quality to consumers, the markets and transportation of fish are within acceptable safety and public health standards. The drawback is lack of implementation of these regulations, because of lack of infrastructure and logistics. Alfred [15] and Allison et al. [10] reported Nigerian Fishery Patrol Ordinance was made to enforce compliance to fisheries laws by naval patrol on Nigerian waterways and the In-

land Fisheries Decree No. 108 of 1992 was to maximally protect Nigeria's inland resources from depletion and ensure safe production and consumption of products.

Result obtained from the study indicated there were low levels of implementations of Fisheries laws and regulations in the study area. The result does not affirm the reports of Raji et al [16] and Agbeja [11] because there were high implementation and enforcement in power to lease water, habitat destruction and prohibition of fishing barriers in study area. There is need for Rivers State to place greater emphasis and increase investment in fisheries laws and regulation enforcement.

5. Conclusion

The study had provided a framework on the level of compliance, implementation and enforcement of inland fisheries laws in Rivers State, Nigeria. Fisher folks know about federal fisheries laws, which they used daily. However, research showed compliance deviated between 2.8+1.06 and 3.0+0.88, implementation and enforcement of inland fisheries regulation in the State is at low level, which could be attributed to poor funding, lack of trained enforcement personals and no government will power. Based on the findings of this research, the following recommendations are made:

- 1) A community-based fisheries management approach should be recognized. The fisherfolks, Community heads, Town Union Executives, women and youth leaders should be involved to ensure compliance, implementation and enforcement of inland fisheries laws.
- 2) Also rewards, effective policing of the inland laws through radio messages, and other forms of social media with technical advice by enforcing agencies adopted.
- 3) There should be a budgetary line to support the logistics of compliance, implementation, and enforcement.
- 4) The State Governor should, as a matter of urgency, pass inland fisheries Bill into law.

Abbreviations

DF	Degree of Freedom
EA	Extremely Aware
MA	Moderately Aware
NA	Not Aware
SA	Slightly Aware
Std Dev (σ)	Standard Deviation
Std Err	Standard Error
VA	Very Aware
κ	Mean

Author Contributions

Uzoma Kainechukwu Nwokoma: Conceptualization, Formal Analysis, Methodology, Writing – original draft

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Conflicts of Interest

The authors declare that they have no known competing and conflict of interests.

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